

Final Report

Remedial Action Plan

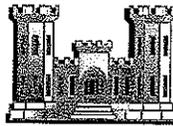
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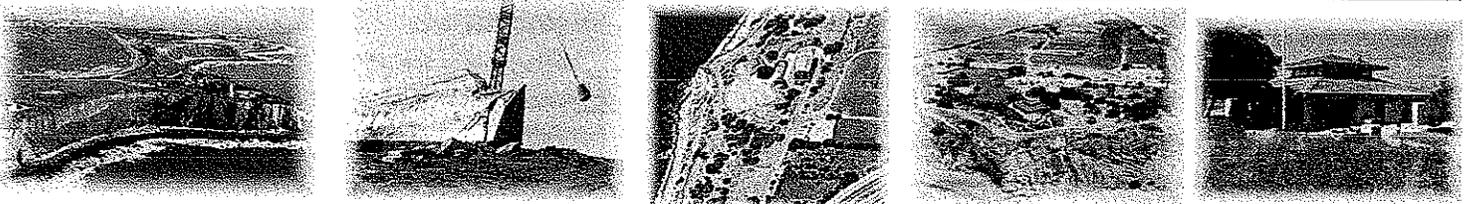
Rancho Palos Verdes, California

April 15, 2002

Submitted to
U.S. Army Corps of Engineers
Los Angeles District



Contract No. GS-10F-0076J
D.O. T0901BH0749



Prepared by

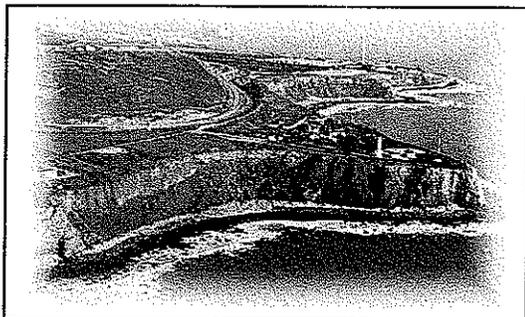
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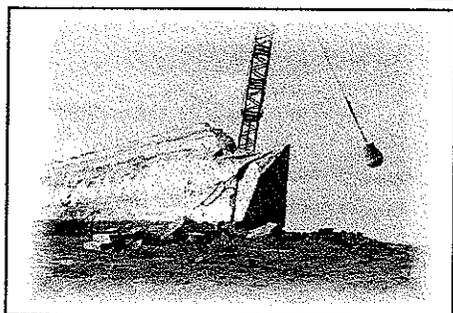


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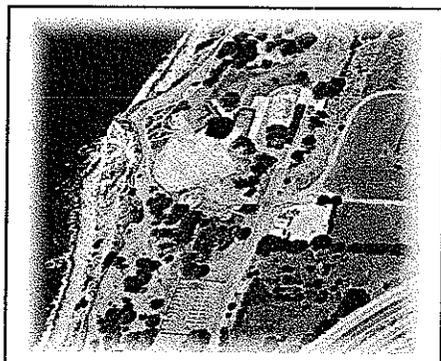
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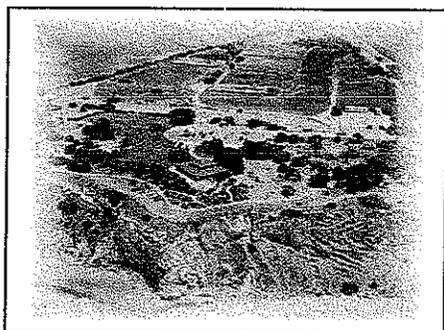
1. *Daily Breeze* photography archives. *Point Vicente, showing the bullet stop of the KD Rifle Range and the U.S. Coast Guard Lighthouse Reservation, 1967.*



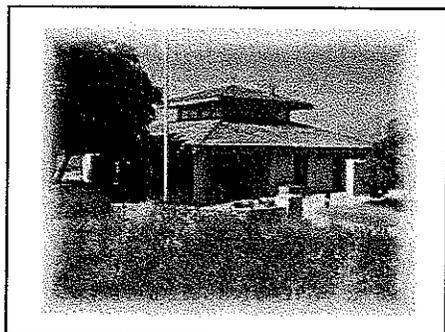
2. Photography archives at the City of Rancho Palos Verdes. *Demolition of the Rifle Range bullet stop, April 1983.*



3. Landiscor Aerial Information photography archives. *Photograph of Point Vicente Interpretive Center area taken after excavation had been stopped and the site was closed, September 1999.*



4. Photography archives at the City of Rancho Palos Verdes. *Point Vicente, showing the Interpretive Center Exhibit Building and cultivated areas, 1999.*



5. SAIC photograph taken during a site visit. *The Interpretive Center Exhibit Building, July 2000.*



FINAL
Remedial Action Plan
for
Site Remediation
at
Point Vicente Interpretive Center

RANCHO PALOS VERDES, CALIFORNIA

Prepared for:

**U.S. Army Corps of Engineers
Los Angeles District**

DERP FUDS Program

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**Contract No.: GS-10F-0076J
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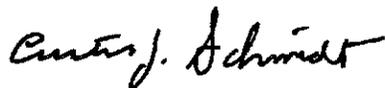
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California Department of Toxic Substances Control

**Remedial Action Plan Approval Record
Sign-Off Sheet**

Point Vicente Interpretive Center

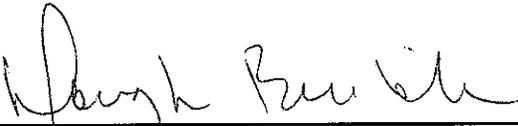
Site Name



Project Manager

5/20/02

Date



Unit Chief

5/20/02

Date



Site Mitigation Branch Chief

5/21/02

Date

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LIST OF ACRONYMS

AOC	Area of Concern
ARARs	Applicable or Relevant and Appropriate Requirements
Cal OSHA	California Occupational Safety and Health Administration
CB	Citizens Band
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CRP	Community Relations Plan
dBA	Decibels adjusted
DTSC	Department of Toxic Substances Control
ERA	Ecological Risk Assessment
FS	Feasibility Study
FSP	Field Sampling Plan
FUDS-DERP	Formerly Used Defense Sites - Defense Environmental Restoration Program
HHRA	Human Health Risk Assessment
HSP	Health and Safety Plan
LeadSpread	California Lead Risk Assessment Spreadsheet
mg/kg	milligrams per kilogram
mm	millimeters
NCP	National Contingency Plan
NIOSH	National Institute of Occupational Safety and Health
NO _x	Nitrous oxides
PEL	Permissible Exposure Limit
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PM ¹⁰	Particulate matter with a diameter less than 10 micrometers
ppm	parts per million (= mg/kg)
PRG	Preliminary Remediation Goals
PVIC	Point Vicente Interpretive Center
QAPP	Quality Assurance Project Plan
RA	Remedial Alternative
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RSPA	Research Special Programs Administration
RPV	City of Rancho Palos Verdes
SAIC	Science Applications International Corporation
SCAQMD	South Coast Air Quality Management District
SO _x	Sulphur oxides
STLC	Soluble Threshold Limit Concentration
SVOC	Semi-volatile organic compound
TBC	"To be Considered" Criterion
TCLP	Toxicity Characteristic Leaching Procedure
IDC	Transportation and Disposal Coordinator
µg/kg	micrograms per kilogram
µg/dL	micrograms per decilitre
USACE	U.S. Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compounds
WET	Waste Extraction Test
XRF	X-ray florescence

EXECUTIVE SUMMARY

This Final Remedial Action Plan (RAP) has been prepared to comply with provisions of the California Health and Safety Code, Section 25456.1 according to guidance provided by the State of California Department of Toxic Substances Control (DTSC). This RAP provides a description of the five Remedial Alternatives developed for remediation of lead-contaminated soil at Point Vicente Interpretive Center (PVIC). Implementation of the preferred Remedial Alternative is described in detail.

Point Vicente Interpretive Center is located at 31501 Palos Verdes Drive West, Rancho Palos Verdes, Los Angeles County, California. The 26.4-acre site is located on the coast of the Palos Verdes Peninsula, and overlooks the Pacific Ocean. There is one single-story Exhibit Building on the PVIC site with grounds covered in natural and introduced vegetation outside the paved areas of walkways and two parking lots. The areas adjacent to the Exhibit Building are landscaped. About 10 acres of the northeast part of the site is under cultivation. PVIC is a well-known whale watching and educational facility.

The subject site was acquired in 1942 by the U.S. Army, which established a Known Distance Rifle Range there in the mid 1950s. The Known Distance Rifle Range was used for small arms training for active and reserve units of the U.S. Army until 1974, when the range was deactivated and the site leased to Los Angeles County. The County maintained the site but did not develop it as a park. In 1978, the County became owner of the site and leased it for a term of fifty years to the City of Rancho Palos Verdes. In 1983, the city developed the site as a park, Point Vicente Interpretive Center (PVIC), and began construction of an Exhibit Building at the location of the former rifle range bullet stop. In the process, the bullet stop was demolished and soil from the earthen berm of the bullet stop was used for on-site fill.

In July 1999, during construction for expansion of the Exhibit Building, excavated soil, transported for disposal off-site, was found to have levels of lead which classified it as a

hazardous waste with respect to transportation and disposal. PVIC was subsequently closed to the public and remains closed at this time.

Upon discovery of lead-contaminated soil, the Regional Water Quality Control Board (RWQCB), Los Angeles Region, was contacted. The RWQCB recommended that DTSC act as lead agency to oversee site remediation because no potential threat to State water was evident. Furthermore, the RWQCB believed that the scope of the mitigation of lead-contaminated soil would have greater relevance to human risk prevention than to environmental protection. There is no groundwater resource beneath the site, and surface water runoff is not a concern because of the low levels of lead bound within the clay matrix.

The Remedial Investigation (RI) of the site, conducted in 1999 and 2001, determined that the only contaminant of concern is lead and that soil is the only medium impacted. Lead-contaminated soil appears to be limited to a clay-rich zone encountered at shallow depths in an area in immediate proximity to the existing PVIC Exhibit Building, the location of the former bullet stop. Lead contamination is not distributed evenly throughout this area, the Area of Concern (AOC), and there are several areas, termed hot spots, of higher lead concentration.

Based on a Human Health Risk Assessment conducted for the Feasibility Study (FS), a total lead concentration in soil of 250 mg/kg (ppm) is proposed as a preliminary remedial goal or action level. This level is protective of children in a residential backyard or playground. Adults have a much higher tolerance. The Ecological Risk Assessment concluded that the site does not present an ecological risk. An assessment made by a US Fish and Wildlife certified biologist determined that the site is not a habitat for either the Palos Verdes Blue Butterfly or the El Segundo Blue Butterfly.

The Feasibility Study (FS) evaluated five Remedial Alternatives (RA) for remediation of the PVIC site. Apart from Remedial Alternative No. 1, the "No Action" alternative

required by the National Contingency Plan (NCP), all alternatives involve various combinations of excavation and capping, as summarized in Table ES-1.

Table ES-1. Summary of Remedial Alternatives Evaluated in the Feasibility Study

Action	RA#1 (No action)	RA# 2	RA# 3	RA# 4	RA# 5
<i>Additional sampling and post remediation monitoring during city construction</i>					✓
<i>Deed Restriction for soil beneath the Exhibit Building</i>	✓	✓	✓	✓	✓
Hot Spots					
Excavate upper 1 foot of soil		✓	✓		
Excavate the entire Hot Spot area and backfill with clean soil				✓	✓
Placement of a clean soil cap		✓	✓		
Area of Potential Concern (AOC)					
Excavate upper 1 foot of soil			✓		✓
Placement of a clean soil cap			✓		✓

The preferred Remedial Alternative, No. 5, involves the following actions:

1. Conduct additional soil sampling to further delineate the vertical and horizontal extent of lead-contaminated soil, including in the area of future PVIC Expansion of the Exhibit Building and stormwater drain construction.
2. Excavate identified "hot spot" soil with lead concentrations exceeding 250 mg/kg and haul off-site to permitted commercial disposal facilities; backfill with clean fill.

3. Remove the top 1 foot of the remaining soils in the Area of Concern (AOC) and replace it with a cap of clean soil.
4. Place a deed restriction on the site which stipulates that lead-contaminated soil may remain beneath the existing PVIC building and/or in unidentified pockets at depths elsewhere, and if future ground intrusive actions take place, e.g., excavations, the soil should be tested for lead and managed accordingly.
5. Provide post remediation monitoring during Rancho Palos Verdes construction of the expanded building foundation and stormwater drains for the PVIC Interpretive Center.

This remedial alternative is the most comprehensive of the remedial alternatives evaluated and mitigates all of the human health exposure pathways. The other remedial alternatives considered were partial excavations and/or partial capping.

The remedial technologies that were rejected for inclusion in the remedial alternatives were:

- Fencing with warning signs (except during remedial construction activities) - Not acceptable to the City of Rancho Palos Verdes.
- Site use limitation - Not acceptable to the City of Rancho Palos Verdes.
- Artificial membrane cap covers - Not suitable to site use.
- In-situ chemical stabilization/solidification - Not applicable to site soil.
- In-situ phytoremediation - Not suitable to site use.
- On-site physical removal of bullets and large lead fragments - Not cost-effective.
- On-site chemical removal of lead from soil by acid leaching - Not cost-effective.

Other documents are available to persons interested in the remedial action selection process: the Final Remedial Investigation Report (RI), the Final Feasibility Study Report (FS), and the Final Community Relations Plan (CRP). These documents are available at three repositories: City of Rancho Palos Verdes City Hall, Fred Hesse Jr. Park, and the Miraleste Public Library.

The appendices of this RAP provide supporting material:

- Appendix A:** This provides a list of the plans and submittals the remedial contractor will prepare prior to remedial action of the site.
- Appendix B:** Responses to public comments on the draft documents are provided.
- Appendix C:** Administrative Record List: an index of reports and other material relevant to remedial action at PVIC.
- Appendix D:** Non-binding Allocation of Responsibility.
- Appendix E:** CEQA Negative Declaration prepared by DTSC. The Negative Declaration finds that the implementation of RA No. 5 at PVIC will not adversely impact the environment.

1.0 INTRODUCTION

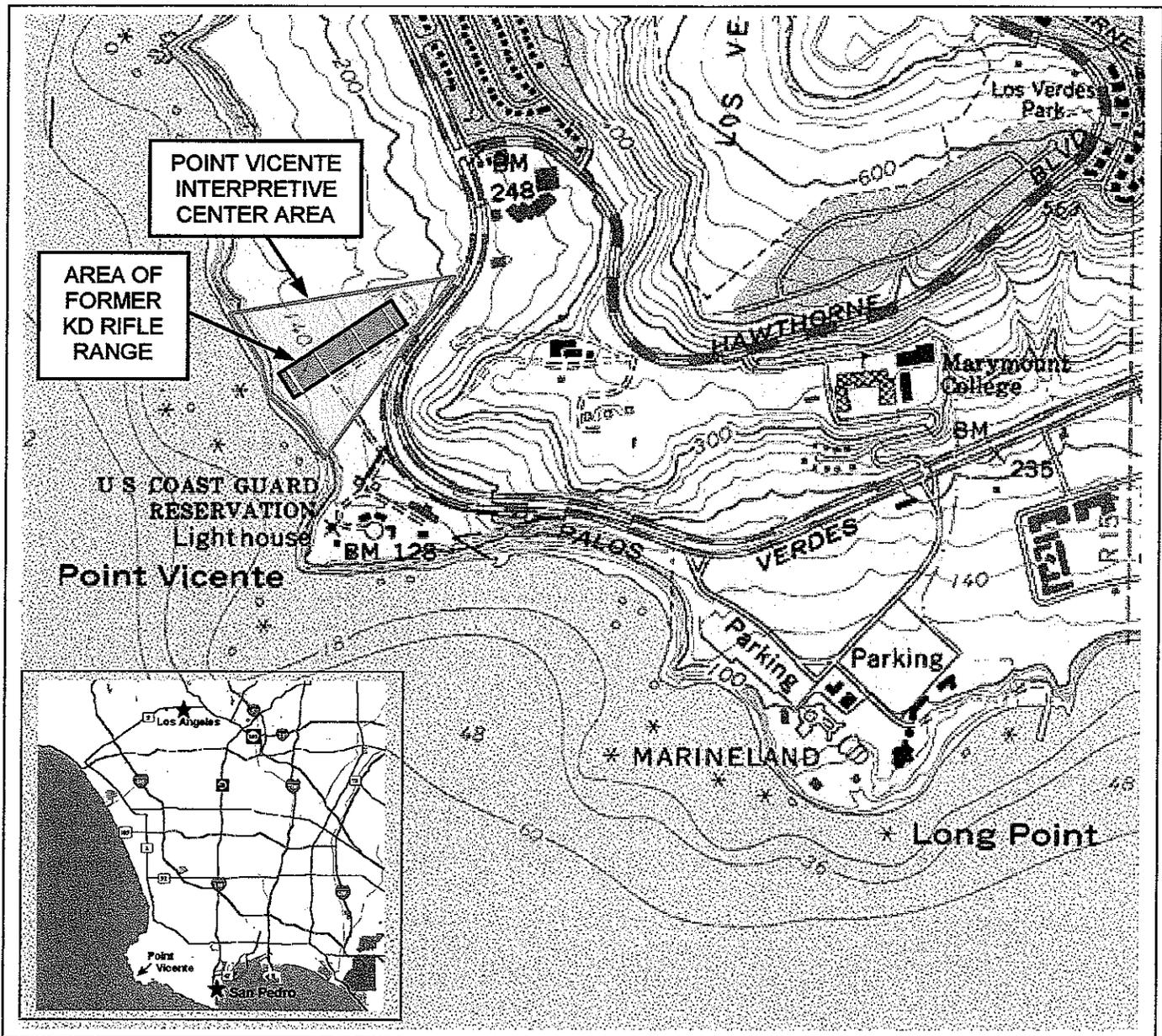
Science Applications International Corporation (SAIC) prepared this Final Remedial Action Plan (RAP) for the U.S. Army Corps of Engineers (USACE), Los Angeles District, for the Point Vicente Interpretive Center (PVIC) under the Formerly Used Defense Site-Defense Environmental Restoration Program (FUDS-DERP). PVIC is located at the site of a former U. S. Army rifle range. This Final RAP describes remediation of lead-contaminated soil through the preferred remedial alternative developed in the Final Feasibility Study (FS) for PVIC, submitted April 15, 2002.

This Final RAP incorporates modification of the preferred alternative based on review and discussion of the remedial alternatives presented in draft documents by the California Department of Toxic Substances Control (DTSC), the City of Rancho Palos Verdes, the U.S. Army Corps of Engineers, and the Rancho Palos Verdes community.

1.1 Site Location

Point Vicente Interpretive Center (PVIC) is located on the coast of the Palos Verdes Peninsula within the City of Rancho Palos Verdes, County of Los Angeles, California. PVIC has an address of 31501 Palos Verdes Drive West, Rancho Palos Verdes, California

As shown in Figure 1-1, the 26.4-acre site is bounded on the south by the Point Vicente Lighthouse and Coast Guard Reservation, and on the west by sea cliffs and the Pacific Ocean. The sea cliffs drop steeply to the shore, where the rugged nature of the beach precludes fishing or other recreational use. A storm drain forms the northern boundary, adjacent to privately owned land (Capital Pacific Holdings) under development as a residential area, Oceanfront Homes. On the eastern perimeter of the site is a four-lane highway, Palos Verdes Drive West. Further east of the site, across the highway, is a residential area, Rancho Palos Verdes City Hall, and a shopping complex known as Golden Cove Center, within which is located a Montessori school.



(PRINTED WITH PERMISSION OF WILDFLOWER PRODUCTIONS)

Township 5 South, Range 15 West
Sections 11,12,13,14
Long. N 33° 45', Lat. W 118° 25'

U.S.G.S. TOPO, REDONDO BEACH, CALIFORNIA



0 1000
SCALE IN FEET

Figure 1-1. Site Location Map, Point Vicente Interpretive Center

1.2 Site History

PVIC is located on the site of a former U.S. military rifle range. In 1942, a rifle range was established at the site by the U.S. Army. The site was then part of Tract 8 of Point Vicente Military Reservation. There was no bullet stop and firing was towards the ocean. Figure 1-2 shows the historical configuration of the site within Tract 8. The subsequent history of the site is summarized below:

1950's. During the 1950s, the Army developed at the site a 1000 feet long Known Distance Rifle Range with berms at 27, 75, 150, and 200 yards, and a main target mound or bullet stop which paralleled the bluffs. The rifle range was used for small arms target practice and qualifying for military personnel stationed at Fort MacArthur, headquarters for the Harbor Defense of Los Angeles, and for National Guard Units.

1974. When the rifle range was no longer needed, and thus deactivated in 1974, the Army leased the site to the County of Los Angeles (the County) until 1978. The County maintained the site, but did not develop it as a park.

1978. In 1978 the Army transferred the site to the County of Los Angeles by quitclaim deed (The County remains the owner of the site.)

1979. Unable to proceed with development of the site as a park, the County of Los Angeles entered into a Joint Exercise of Powers Agreement with the City of Rancho Palos Verdes (the City) in 1979, whereby the City leased the site from the County for a term of 50 years.

1983. In 1983 the City began construction of the Point Vicente Interpretive Center Exhibit Building as part of developing the site as a park. The exhibit building was built on the site of the bullet stop (main target mound), which was demolished in the process and used for fill on the site. The site also incorporated two parking lots. About 10 acres were leased to private individuals for cultivation of flowers.

1984. The Palos Verdes Interpretive Center was opened in 1984 and became a well known educational and recreational resource for the community. Since PVIC opened, it annually served thousands of residents and school children, and was used by wedding parties almost every weekend. The PVIC was also the premier whale-watching site on the west coast for the annual census of gray whale migration.

1999. Construction for the expansion of PVIC began in July 1999. In August 1999, upon the detection of lead in excavated soil that had been transported off-site for sale as fill, PVIC was closed as a precaution to protect the public from exposure to lead-contaminated soil. The PVIC remains closed at this time.

Upon discovery of lead-contaminated soil, the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, was notified and invited to oversee corrective action at the site. The RWQCB recommended that DTSC act as lead regulatory agency because no potential threat to State water was evident. Furthermore, the RWQCB believed that the scope of the mitigation of lead-contaminated soil would have greater relevance to human risk protection, as there is no aquifer beneath the site.

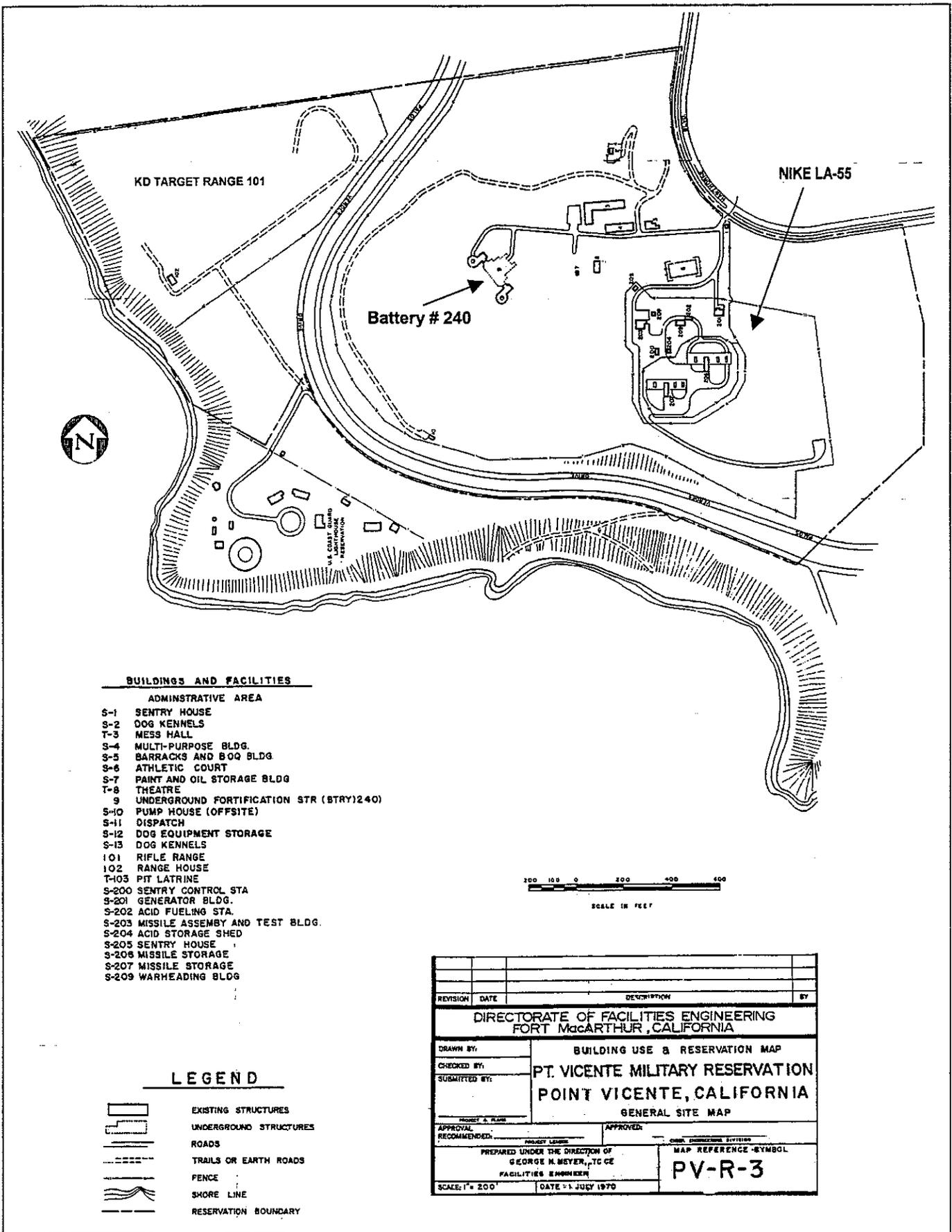


Figure 1-2. Point Vicente Military Reservation, General Site Map

Following the closure of PVIC in 1999, the City's consultant, The Source Group, Inc. (TSG), conducted site investigations in September 1999 and in June 2001 to determine the extent of lead contamination. The results of these two investigations are described in Section 2. A Phase I Assessment was completed by the County of Los Angeles (the current owner of the property) in January 2000 (LA County, 2000). The Phase I Assessment found that lead from expended bullets, associated with the historic Known Distance Rifle Range, was the probable source of the lead found at the site.

1.3 Physical Characteristics of the Site

This section presents an abbreviated description of the site physical characteristics based on the Remedial Investigation Report and the Feasibility Study, to which readers are referred for details.

1.3.1 Surface Features

The site is located on the lowest of multiple wave-cut coastal terraces. A near-vertical sea cliff borders the southern to western portions of the site. The terrace slopes gently southwest at elevations ranging from 170 feet above mean sea level near the highway to 120 feet at the cliff. There is a drainage channel following the northern property line, eventually draining to the shore beneath the cliff and then to the ocean. Most of the site is covered with vegetation. The areas surrounding the Interpretive Center Exhibit Building are landscaped and there are two paved parking lots. The northeast portion of the site is under cultivation for flowers and vegetables. Figure 1-3 shows the configuration of the site in the vicinity of the Exhibit Building.

1.3.2 Geology

The site is located within the Peninsula Range geomorphic province, which consists of predominantly northerly and northwesterly trending mountains and associated valleys. Bedrock in the southwestern Palos Verdes Hills consists of complex stratigraphic layering of shale, mudstone, siltstone, and volcanic basaltic rock. Deposition of shale, mudstone, and siltstone that forms the Monterey Formation occurred in the Tertiary Period. The volcanic rocks were formed during the Miocene Epoch when the Monterey

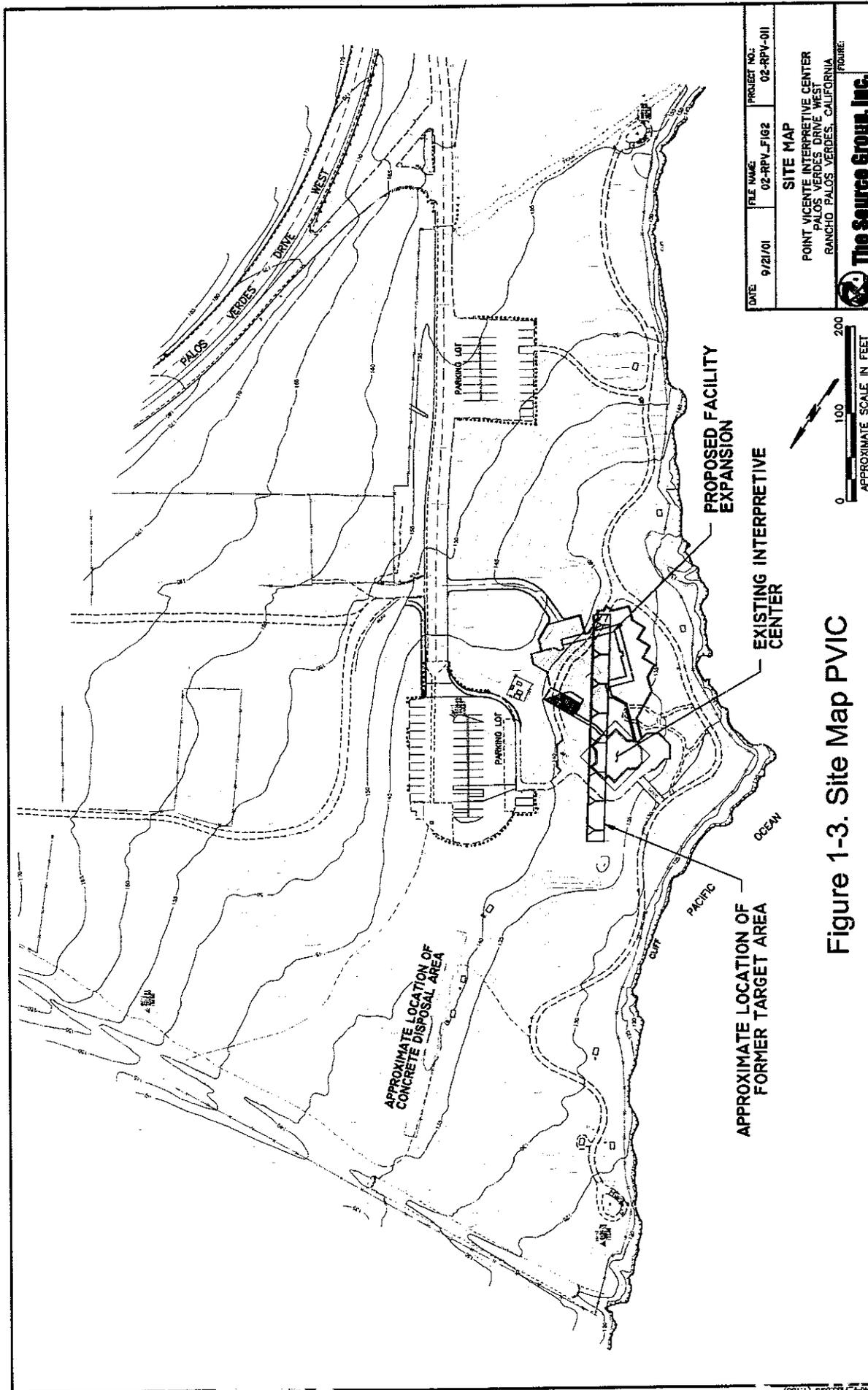


Figure 1-3. Site Map PVIC

Formation was being deposited. The volcanic rocks contain sedimentary rocks as inclusions.

Terrace deposits cover the lower marine terrace, location of PVIC, as well as the upper marine terrace where the City Hall is located. This wave-cut terrace consists of a veneer of terrace deposits, primarily silty to sandy clay weathered from the local volcanic rocks, overlying the Miocene volcanic and shale bedrock beneath the site. Clay content ranges from 18.7 percent in the subsoil to 39 per cent in the upper soil. High clay content, which results in poor percolation characteristics and a low water adsorption capacity, supports surface run-off. That the clay-rich soil is extremely plastic (sticky) when wet presents some excavation and cultivation difficulties. The clay layer ranges from 2 to 15 feet in thickness and is in direct contact with the bedrock throughout the site.

Despite the relative softness of the volcanic rocks beneath the site, the bedrock tends to be cohesive and only slowly yields to gully erosion. The area is underlain by coherent bedrock, the lithologic and structural features of which favor gross stability.

1.3.3 Hydrogeology

There are no aquifers beneath the site. Miocene-age bedrock underlying the site at Point Vicente is generally nonwater bearing. This means that the bedrock contains limited quantities of water insufficient for use as drinking water. Los Angeles County Public Works Hydraulic/Water Conservation Division records indicate that no wells are present at the site or within 2 miles of the site. There is no evidence of a perched aquifer, springs, or seeps.

The Point Vicente Interpretive Center is situated on a terrace that is gently sloping toward the ocean. A thin veneer of fine-grained, clay rich, soil is spread across the bedrock of the terrace. Surface water generally drains off the terrace and over the cliffs to the ocean. No streams are present on or near the site; however, a drainage ditch is present along the north property line. The outflow of the drainage is at the sea cliff in the northwest corner of the site.

Although surface water normally drains off the terrace, minor amounts of water may percolate into the subsurface through the clay to the bedrock. At the bedrock interface, groundwater will move down slope toward the ocean; however, some water may penetrate the bedrock through the fractures, eventually joining the ocean.

1.3.4 Seismicity

Although Point Vicente is considered a seismically active area, seismic risk is considered a low to moderate risk at the site compared with other areas in California because of the firm bedrock and terrace deposits underlying the site. The site at Point Vicente is not crossed by any known active or potentially active faults.

1.3.5 Climatology

Meteorological conditions at Point Vicente are almost completely dominated by the adjacent Pacific Ocean, which creates the generally mild marine climate. The Palos Verdes Peninsula is surrounded on three sides by the ocean and subjected to sea breezes on a daily basis. In the morning, salt particles from evaporated sea spray often cause a hazy condition that is cleared in the afternoons by the dominant west-southwest sea breeze.

Similar to most of coastal Southern California, the Palos Verdes Peninsula has a Mediterranean climate characterized by mild wet winters and dry summers. During the winter rainy season, Point Vicente receives about 11 to 12 inches of rain. Each rain interval is typically followed by a few clear sunny days of warm weather. Mild thunderstorms associated with a tropical air mass also occasionally occur in this area, typically at the end of the summer, but also toward the end of a winter storm.

2.0 SUMMARY OF PREVIOUS REMEDIAL INVESTIGATIONS

Following the discovery of lead in soil that had been excavated from the site as part of the construction for the PVIC expansion in July 1999, The Source Group, Inc, consultants to the City of Rancho Palos Verdes, conducted two Phase II site investigations to determine the extent of lead contamination at the site and also to test for any other contaminants. Soil was the only medium investigated, as there is no surface water at the site and no storm water at the time of the investigations; there is no aquifer beneath the site. Measurements were not made of airborne lead. These two investigations are presented in the reports summarized below and also in the Remedial Investigation Report prepared December 2001.

The Source Group, Inc., *Site Assessment Report, Point Vicente Interpretive Center, July 27, 2000.*

In September 1999, shallow soil samples were collected from 83 borings over an area of about 10 acres around the PVIC Exhibit Building. The samples were analyzed primarily for total lead. The finding of the assessment showed that the lead-contaminated soil was limited to a clay-rich zone encountered at shallow depths in the area of the former Known Distance Rifle Range. The concentration of lead was low (less than 50mg/kg) in all but five samples, identified as hot spots. In four of these hot spots, located near the Exhibit Building, the level of lead only marginally exceeded the former California Preliminary Remediation Goal of 130 mg/kg; a fifth hot spot soil sample on the western edge of the parking lot had a singularly high level of 6,100 mg/kg, possibly because of a small bullet fragment.

The Source Group, Inc., *Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 15, 2001.*

The Source Group, Inc., completed soil sampling from an additional 46 borings in June 2001 to further delineate lead “hot spots” and to fill two data gaps: sampling of the site

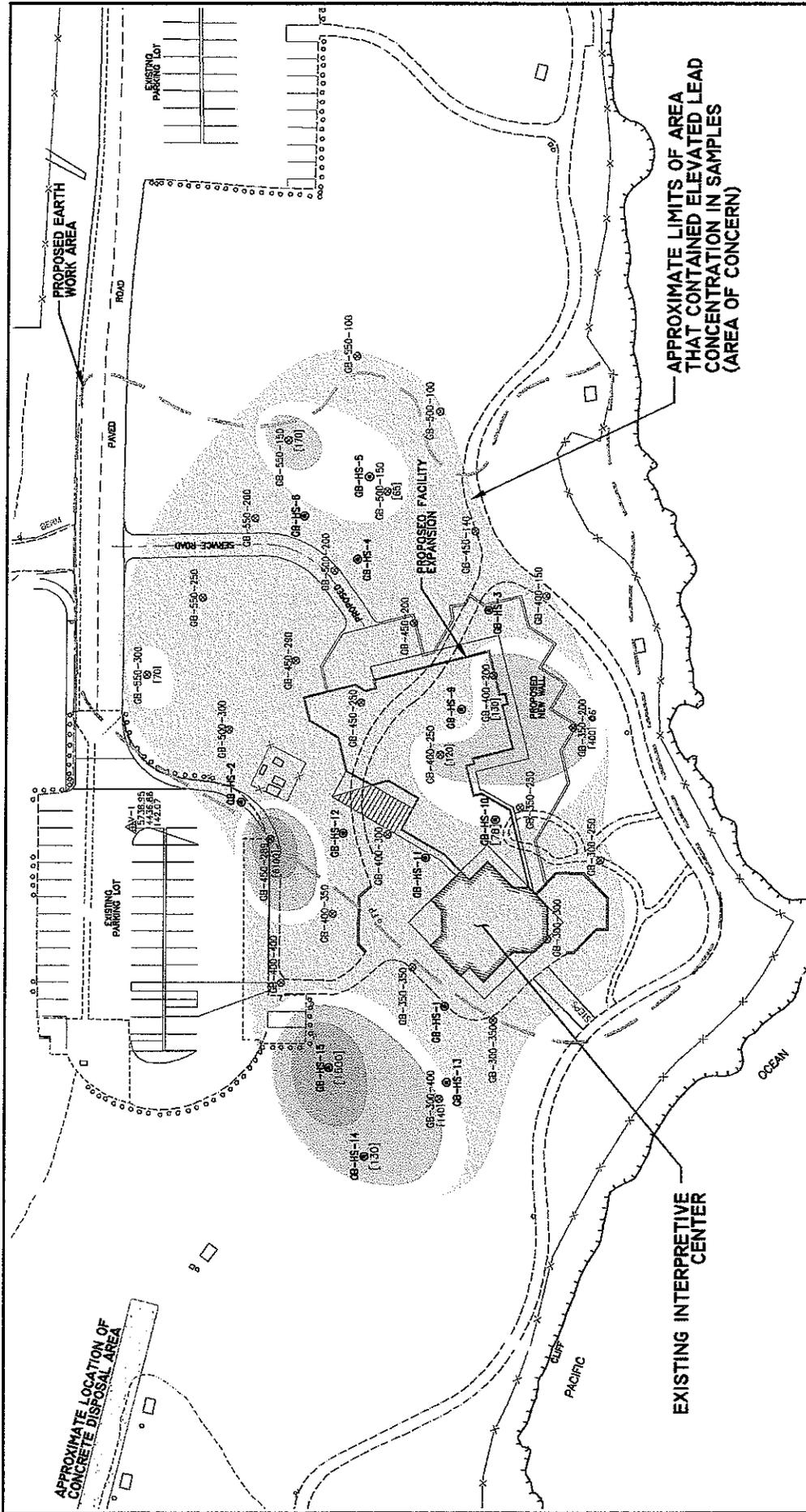
Fringe Areas, not previously sampled; and sampling of the Concrete Disposal Area where concrete from the demolished bullet stop had been buried in 1983. The results from this assessment supported the earlier conclusion that elevated lead levels are limited to soil in the vicinity of the Exhibit Building and that there appear to be within this area several hot spots. In the Fringe Area and Concrete Disposal Area elevated lead levels were not found; lead levels in these areas were less than 10 mg/kg. Figure 2-1 shows the distribution of lead concentrations in the soil found at PVIC.

Soil samples were analyzed also for other potential contaminants: diesel and gasoline hydrocarbons, volatile and semi-volatile organic compounds, pesticides polychlorinated biphenyls (PCBs), perchlorite, and organic lead. That none were detected supports the conclusion that elemental lead is the only contaminant of concern at the site.

2.1 Nature and Extent of Contamination

The site investigations identified lead as the only contaminant at the site. Although antimony, zinc, and copper may be associated with rifle ranges, antimony was not detected; copper and zinc were detected at levels within the range of background levels. Casings were not found at the site during recent investigations. Prior to 1983, when PVIC was constructed, Los Angeles county maintenance personnel and lessees farming the site reported finding and collecting casings in the fringe areas of the site.

Lead is present as elemental lead in bullets and bullet fragments, and as ionic lead formed as bullets weather over many decades. Lead is persistent in that it is not biodegradable and will not experience significant dilution once bound up in the clay matrix. Research carried out at Virginia Tech (VPI, 2000) on lead bullets from Civil War sites and shooting ranges demonstrated that deposits of minerals, lead carbonates and hydroxycarbonates, form a coating on the surface of the bullet which prevents further corrosion; lead bullets from the Civil War have persisted in battle field soil of Virginia for more than 100 years because of these mineral coatings (VPI, 2000). These research findings are consistent with the finding of intact 0.45 caliber pistol bullets at PVIC in soil around the Exhibit Building.



APPROXIMATE LIMITS OF AREA THAT CONTAINED ELEVATED LEAD CONCENTRATION IN SAMPLES (AREA OF CONCERN)

EXISTING INTERPRETIVE CENTER

GENERAL SITE LEGEND

- PROPOSED EARTH WORK AREA
- GB-15-16
- GB-50-500
- 10000
- PROPOSED EARTH WORK AREA
- JUNE 2001 SOIL SAMPLE LOCATIONS
- SEPTEMBER 1999 SOIL SAMPLE LOCATIONS
- HIGHEST TOTAL LEAD CONCENTRATIONS IN SOIL (250 mg/kg)
- LEAD CONCENTRATIONS IN SOIL ≤ 50 mg/kg $>$ BACKGROUND (AREA OF CONCERN)

- LEAD CONCENTRATIONS IN SOIL $> 1,000$ mg/kg
- LEAD CONCENTRATIONS IN SOIL > 100 mg/kg
- LEAD CONCENTRATIONS IN SOIL > 50 mg/kg

GENERAL SITE NOTES:

1. HIGH TOTAL LEAD CONCENTRATIONS IN SOIL FOUND FROM 0.5-1', EXCEPT FOR SAMPLE LOCATION GB-350-200, HIGH CONCENTRATION AT 6'.

DATE	12/01	FILE NAME	02-SAL-FIGS	PROJECT NO.	02-SAL-001
HIGHEST TOTAL LEAD CONCENTRATIONS IN SOIL - AREA OF CONCERN					
POINT VICENTE INTERPRETIVE CENTER RANCHO PALOS VERDES, CALIFORNIA					
					FIGURE
					2 - 1



The Source Group, Inc.

The lead-contaminated soil appears to be limited to a clay-rich zone encountered at shallow depths ranging from 1 to 4 feet bgs. As shown in Figure 2-1, lead levels are low throughout the site with levels above 50 mg/kg limited to the area where the deposition or grading of the former Known Distance Rifle Range backstop berm soil had occurred. This area is beneath the existing Exhibit Building on the site, surrounding the building, and in the area of the proposed PVIC expansion developments to the site, which are adjacent to the existing building.

Within the area where backstop soil had been deposited, five “hot spot” areas were identified, as shown on Figure 2-1. Within these hot spots, which are small areas, lead levels ranged from 70 mg/kg to 6,100 mg/kg. It is important to note that additional hot spots or high lead concentrations may be present as a pocket anywhere within an area of roughly 400 by 250 feet (100,000 square feet). Likewise, some deeper pockets of lead-containing soil that were not detected during previous site investigations may be present.

2.1.1 Fate and Transport

There is a very limited migration of lead in soil. Total lead concentrations were found to be confined to the top few feet of soil (0.5 to 2 feet) in all areas except one, in which a high lead concentration was detected in one sample at 6 feet below grade. This area is south of the Exhibit Center Building and may be indicative of deeper lead-containing soil around the southwest side of the structure. This occurrence in deeper soil may be the result of relocation of lead-containing soil in 1983 during the construction of the PVIC building. The soil from the demolition of the earthen berm of the bullet stop was used to extend the flat area to create the building pad on which to erect the current structure.

It is anticipated that elevated lead concentrations will not be found below bedrock, as the bedrock below the site is well indurated and not likely to absorb lead. Moreover, the bedding of the shale bedrock beneath the site is horizontally oriented, posing a barrier to vertical migration of water and leachate.

Surface water runoff may be a transport mechanism for lead migration. During the infrequent heavy rainfalls of longer duration, runoff from the lead-containing soil areas may wash over the cliffs to the ocean. Concentrations of lead would be anticipated to be very low because of the short residence time of water in contact with the soil and the generally low levels of lead in the surface soil. Significant contaminant transport by wind suspension or saltation is unlikely as clay does not produce a dusty surface and the vegetative cover reduces dust emissions.

3.0 SUMMARY OF PRIOR REMOVAL ACTIONS

3.1 Removal of Contaminated Soil

On May 18, 1999 the City of Rancho Palos Verdes awarded a construction contract for the expansion of the Point Vicente Interpretive Center. In July 1999, expansion construction activities began. Approximately 2,300 tons of soil excavated during initial grading for the expansion project was transported to a property in San Pedro for use as fill material. Surplus soil was also transported to the Chandler's Landfill, located in Rolling Hills Estates, California, for disposal. Subsequent sampling of the excavated PVIC soil transported to San Pedro indicated lead contamination was present at that site; however, only low concentrations of lead were detected in the PVIC soil placed in the Chandler Landfill. The excavated soil disposed in the Chandler Landfill (nearly 6,000 tons) was excavated from the landfill and transported to an appropriate landfill for disposal.

The soil transported to the San Pedro site was returned to PVIC and stockpiled in the parking lot, with subsequent characterization and disposal at an appropriate off-site landfill. Additional soil generated during the July 1999 facility expansion activities, which had never left the site initially, was stockpiled and also characterized and transported off-site for disposal at an appropriate landfill.

Levels of lead in the stockpiled soil ranged from 43 to 3000 mg/kg, with an average of 455 mg/kg. That these levels are higher than those found in the subsequent site investigations in 1999 and 2001, as described in Section 2.0, suggests that excavation conducted for PVIC expansion de facto achieved partial remediation of the site through removal of soil with high levels of lead.

3.2 Fencing and Posting

When lead was detected in site soils in August 1999, the PVIC site was closed as a precaution to protect the public from exposure to the lead-contaminated soil. The vehicular access gate is currently locked and a sign is posted that PVIC is closed.

4.0 SUMMARY OF SITE RISKS

Baseline risk assessments were conducted to provide quantitative and qualitative information on the risk to both human health and the environment presented by exposure of current and future receptors to contaminated media at the site. These risk assessments are presented in the Feasibility Study in Appendices C and D and are summarized below.

4.1 Human Health Risk Assessment

The Human Health Risk Assessment identified adult and child visitors, as well as docents who work at the site, as receptors that could be exposed to lead-contaminated soil through incidental ingestion of soil and dust. Soil ingestion is the major exposure pathway, as there is no groundwater or surface water at the site. Exposure through surface water run off to the shore was not considered an exposure pathway, as the shore adjacent to the site is rugged and not accessible to the public. *How about from below??*

In addition to incidental ingestion of soil, exposure through deliberate ingestion of soil and ingestion of bullet fragments was evaluated for children, who are most sensitive to the toxicity of lead.

Although it is unlikely that the site would be converted to residential use, health risks to future on-site residents were evaluated as a conservative approach to the health risk assessment. Risks were also evaluated for construction workers who will be working at the site in the near future to complete construction for the expansion of PVIC.

Risk from exposure to lead under these various exposure scenarios was evaluated by using the California Assessment Spreadsheet (LeadSpread) that predicts the level of lead in the receptors under the exposure scenarios described. Blood levels of lead over ten micrograms per deciliter (10 µg/dL) are indicative of lead toxicity for children and pregnant women; the blood lead level of concern for construction workers and other adults is a range of 25 to 50 µg/dL.

Results of the LeadSpread model indicated that exposure of visitors, PVIC docents, and construction workers to lead-contaminated soil at the site is not expected to result in adverse health effects as blood levels lower than 10 $\mu\text{g}/\text{dL}$ are predicted. Adverse health effects are predicted only for a future hypothetical residential scenario for exposure to lead at the hot spots.

The risk to children ingesting lead fragments is not quantifiable. Ingestion of lead fragments could result in acute health effects such as encephalopathy. That such an event has not occurred in the 15 years PVIC has been open, suggests that the probability of it occurring in the future is low.

4.2 Ecological Risk Assessment

The Ecological Risk Assessment (ERA) evaluated the risk presented by lead-contaminated soil and dust to shallow rooted vegetation, soil invertebrates, ground feeding birds, small mammals, and second order carnivores. The ERA concluded that any potential ecological risk would be from hot spot soil on the PVIC site. Small mammals, as represented by the shrew and vole, are at risk in the hot spot areas, but not elsewhere on the site. Based on the risk estimate for California quail, ground-feeding birds are not likely to be at adverse risk from soil lead at PVIC, except in the hot spot areas. However, their risk is expected to be higher if there are numerous lead fragments in the soil between 0.5 and 2.8 mm in size where grit ingestion could become significant.

The ERA is considered conservative in that most of the receptors have much larger feeding ranges. In addition, the site is situated in open space and approximately 20 acres of the Point Vicente Interpretive Center and 50 acres of Point Vicente Park may be more attractive non-contaminated habitat than the area of concern in the immediate vicinity of the Interpretive Center Exhibit Building. Much of the wildlife habitat within the area of elevated contamination is already disturbed due to construction and other human activities; therefore, wildlife exposures and risks are even less likely to occur. Although

effects associated with lead may occur at the level of individual organisms, ecological impacts are not expected at the population, community, or ecosystem level. This is because population density mechanisms at Point Vicente would likely offset any site-related loss of a few individuals that might occur.

The ERA determined that there were no habitats of endangered or threatened species at the site. At the request of DTSC, a biologist registered with the US Fish and Wildlife Department as a specialist in the Palos Verdes Blue Butterfly and El Segundo Blue Butterfly conducted a biological assessment at the site. His findings supported the conclusion of the ERA that the site is not a habitat for either the Palos Verdes Blue Butterfly or the El Segundo Blue Butterfly.

4.3 Determination of Cleanup Levels

Cleanup levels or remediation goals are qualitative statements or numerical values, expressed as concentrations of a contaminant, which serve to define when remediation has been attained. Achieving the remedial goal in a remedial action should result in residual contamination levels that are protective of human health and the environment. Under CERCLA, remediation goals are typically established using health-based requirements known as Applicable or Relevant and Appropriate Requirements (ARARs), when available.

When health-based ARARs are not available, or are not sufficiently protective, remediation goals are developed from site-specific risk calculations or other risk-based criteria. The California Lead Risk Assessment Spreadsheet (LeadSpread), the primary tool in California for evaluation of health risks from exposure to lead, was used to calculate site-specific Preliminary Remediation Goals (PRGs) for PVIC.

The Feasibility Study identified the following PRGs for lead-contaminated soil:

- 400 mg/kg (ppm): USEPA Region 9 PRG of 400 mg/kg, developed to be protective of children in a residential scenario.
- 160 mg/kg (ppm): site-specific risk-based PRG generated by LeadSpread for a residential pica child, which is a child who deliberately ingests soil.
- 250 mg/kg (ppm): site-specific risk-based PRG generated by LeadSpread for a residential child who incidentally ingests soil and dust.

The risk-based goals shown are the most conservative in that they apply to a hypothetical residential scenario and are protective of children, the most sensitive receptors. For the purpose of further discussion in this RAP, a total lead concentration in soil of 250 mg/kg is the assumed cleanup level, as DTSC has verbally agreed to this level as a cleanup level for PVIC for lead-contaminated soil. This level is also being proposed for Los Angeles Unified School District new school construction where the exposure of children in a similar scenario, to lead-contaminated soil in playgrounds, is of concern.

This remedial goal is also relevant to the concerns of the City of Rancho Palos Verdes with respect to planned improvements to the site. The City has expressed a desire to have potentially contaminated areas involved with the construction of subsurface storm drains, utilities and the PVIC expansion building remediated concurrent with the overall remediation of the site. Thus, 250 mg/kg will be the remedial goal or action level for soil associated with the City's construction at the site. Soil with a lead concentration above 250 mg/kg will be excavated and disposed of off-site. Soil with lead concentration of less than 250 mg/kg may be left on-site as it presents no health risk, and no risk to the environment because there is no groundwater resource beneath the site.

There remain in the surface and subsurface soils at the site bullets and bullet fragments, which present an unquantifiable risk. Children who are most likely to ingest bullet fragments are also most sensitive to the toxic effects of lead. Although this remedial goal cannot be quantified, removal of lead bullets and fragments from the first foot of surface soil is a remedial goal used in the development and evaluation of Remedial Alternatives

5.0 SUMMARY AND EVALUATION OF REMEDIAL ALTERNATIVES

5.1 Description of Remedial Alternatives Evaluated

That lead is the only potential contaminant of concern and shallow soil is the only medium of concern at the PVIC site limits the number of potential remedial technologies that could be applicable to the site. The Final Feasibility Study (FS) evaluated potentially applicable technologies and eliminated the following:

- Fencing with warning signs (except during remedial construction activities) – Not acceptable to the City of Rancho Palos Verdes.
- Site use limitation – Not acceptable to the City of Rancho Palos Verdes.
- Artificial membrane cap covers – Not suitable to site use.
- In-situ chemical stabilization/solidification – Not applicable to site soil
- In-situ phytoremediation – Not suitable to site use.
- On-site physical removal of bullets and large lead fragments – Not cost-effective, would lengthen schedule.
- On-site chemical removal of lead from soil by acid leaching – Not cost-effective, would lengthen schedule

The remaining remedial technologies, listed below, were used in the development of potential remedial alternatives (RAs).

1. Site Deed Restrictions
2. Capping (Clean Fill Soil)
3. Soil Excavation
4. Transport and Disposal of Hazardous Soil to a Commercial Hazardous Waste Landfill or a Non-Hazardous Class III Landfill Permitted to Accept “Special Waste”

The five RAs developed in the Feasibility Study are summarized in Table 5-1. RA No. 1, No Action, is required by the National Contingency Plan (NCP) and provides a basis for comparison of how effectively the other RAs meet the nine evaluation criteria listed in Section 5.2.

Table 5-1. Summary Descriptions of Remedial Alternatives (RAs) for the PVC Site

RA Number	Summary Description of Remedial Alternatives
1	<p>No Action - Fencing, warning signs, use restrictions, deed restrictions and other passive measures to prevent use of the property for activities that could endanger public health and the environment.</p>
2	<p>Excavation of 1 foot of surface soil, capping of Hot Spot Areas A, and deed restriction. The five identified hot spots have a total estimated surface area of 30,000 square feet. The top 1 foot of soil (approximately 1,110 cubic yards, weighing 1,700 tons) would be excavated and replaced with clean soil (beneath future landscaping) or gravel (beneath future buildings, patios, asphalt and other structures). It is assumed that half of the excavated soil would be disposed to an off-site Class I landfill as a California-regulated hazardous waste and the remainder disposed to an off-site Class III landfill permitted to accept "special waste." A deed restriction would stipulate that lead-contaminated soil remained on-site and precautions should be taken to protect workers if future ground invasive actions are done, e.g., digging trenches. Excavations would be filled with clean soil or gravel.</p>
3	<p>Excavation of 1 foot of surface soil and capping of both identified Hot Spot Areas A and Potential Area of Concern B, plus a deed restriction. This RA is the same as RA 2 above except that Area B soil of approximately 67,000 square feet surrounding the hot spots would also be excavated to 1 foot depth and capped with clean soil. The estimated soil volume would be approximately 2,500 cubic yards weighing approximately 3,800 tons. It is assumed that half (1,900 tons) of Area B soil would be disposed to a Class III landfill permitted to accept "special wastes" and the remaining 1,900 tons to be found clean and to remain on-site. Given the above assumptions, including the Area A cap excavation soil, this RA would generate 850 tons of soil for disposal to a Class I landfill and 2,750 tons of soil to a Class III landfill permitted to accept "special wastes." Excavations would be filled with clean soil or gravel.</p>

4	<p>Total Excavation of Hot Spots Area A and deed restriction. This RA is the same as previous RA-2 except that the hot spots would be excavated down to the areal extent and depth of lead-contaminated soil, not just capped with 1 foot of soil. The RI Report roughly estimated that the depth of contaminated soil varied between 1 foot and 4 feet depth in Area A with 2 feet depth being about average. With approximately a 30,000 square foot surface area and an average 2-foot depth the Hot Spots Area A would generate about 2,220 cubic yards of excavated soil, weighing 3,400 tons. It is assumed that half the excavated soil (1,700 tons) would be disposed to an off-site Class I landfill as a California-regulated non-RCRA hazardous waste and the remaining 1,700 tons disposed to an off-site Class III landfill permitted to accept "special wastes." The actual limits of excavation will be determined by field confirmation sampling and actual soil volumes may vary significantly from the estimates above. Excavations would be backfilled with clean soil or gravel.</p>
5	<p>Total Excavation of Hot Spot Areas A and excavation of the upper 1 foot of soil in Area of Concern B followed by capping of Potential Area of Concern B, plus deed restriction. This RA is the same as previous RA-4 except that Area B soil of approximately 67,000 square feet surrounding the hot spots would also be excavated to 1 foot depth and capped with clean soil. The estimated additional soil volume would be approximately 2,500 cubic yards, weighing approximately 3,800 tons. It is assumed that half (1,900 tons) of Area B soil would be disposed to a Class III landfill permitted to accept "special wastes" and the remaining 1,900 tons to be found clean and remain on-site. Including the Area A excavated soil, RA-5 would generate an estimated 1,700 tons of soil to be disposed to a Class I landfill as a California-regulated waste and 3,600 tons of soil to be disposed to a Class III landfill permitted to accept "special wastes." Excavation would be backfilled with clean soil or gravel. This alternative also provides for additional sampling of soil in the area of the Exhibit Building expansion foundation pad, and where trenching will occur for utilities and stormwater drains. This additional sampling will further define the vertical and horizontal extent of lead-contaminated soil and provide additional assurance that any pockets of lead-contaminated soil are discovered. The Corps remedial contractor will provide post remediation monitoring during the City's construction work on the foundation pad and utilities and will dispose of any soil over 250 mg/kg excavated in the course of the City's construction work at the site.</p>

As seen in the RA descriptions, two kinds of areas have been identified based on the results from the Remedial Investigation: Potential Area of Concern B within which are the Hot Spot Areas A. These areas are shown in previous Figure 2-1. On-site treatment is not included because there is insufficient estimated volume of hazardous soil to make it cost-effective.

5.2 Evaluation Criteria

The nine criteria used to evaluate RAs are:

- Overall protection of human health and the environment
- Compliance with ARARs and TBCs
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume
- Short-term effectiveness
- Implementability
- Cost
- State acceptance
- Community acceptance.

5.2.1 Overall Protection of Human Health and the Environment

A Human Health Risk Assessment (HHRA) is found in Appendix C and an Ecological Risk Assessment is found in Appendix D of the Final Feasibility Study (SAIC, 2002). The HHRA evaluated only the risk from exposure to lead-contaminated soil, as there is no groundwater resource beneath the site and surface water runoff, in which dissolved lead is insignificant, is directly to the shore at Point Vicente. The shore is rugged and essentially not accessible to the public.

The Ecological Risk Assessment found no risk to fauna and flora except in the small area of the hot spots. Thus, the only potential risk at this site appears to be to human health as

a result of exposure to on-site lead-contaminated soil, either through ingestion or inhalation.

Remedial Alternative 1, the "No action" alternative is required by the National Contingency Plan (NCP) and provides a basis for comparing the other RAs proposed. Although the site is not highly contaminated, there are several possible scenarios where some human health risk might occur if Remedial Alternative 1, the no action alternative, were accepted and no site remediation action initiated. These scenarios include:

1. There is an unquantifiable risk to a small child from ingesting lead bullet fragments. (There is no record of such occurrences during the 15 years that the PVIC has been open to the public.)
2. If PVIC land is sold in the future for residential construction, there could be a potential health risk to a small child resident from playing in and ingesting soil in his or her yard with lead concentrations over about 250 mg/kg. In addition, there would be an unquantifiable possible risk to a small child from ingesting lead bullet fragments.
3. Risk to a long-term landscape worker from exposure to soil with lead concentration above 1000 mg/kg, i.e., hot spots.

Remedial Alternative 1, the no action alternative, would not remove any of the above potential human health risks, but would seek to prevent human exposure by land use restrictions and deed restrictions. The land use restrictions would prevent public use of the site lead-contaminated areas for present recreational use and future residential use.

Remedial Alternative 2, excavation of 1 foot of surface soil and capping of only the hot spots with a 1-foot clean soil cap, would prevent exposure to hot spot soil but would not address the potential risk from bullet fragments or unidentified pockets of lead-contaminated soil as Potential Area of Concern B would remain uncapped. Moreover, if the remaining hot spot soil were excavated in the future, the soil would present a health risk to human receptors.

Remedial Alternative 3, excavation of 1 foot of surface soil and capping of both the Hot Spots Area A and the surrounding Potential Area of Concern B with a 1-foot clean soil cap, would address the major concerns of health risk from exposure to bullet fragments and pockets of lead contamination in the upper soil throughout Areas A and B. During the time period that the PVIC exists, recreational visitor children would be protected against exposure to lead-contaminated soil and bullet fragments. However, since contaminated hot spot soil would still exist beneath the clean soil cap, some risk would remain to the hypothetical PVIC landscape worker (tree and bush planting, etc.) and to the hypothetical future residential child.

Remedial Alternative 4, total excavation of the identified hot spots, would remove the remainder of the contaminated soil in the Hot Spots Area A and remove the health risk from that soil to workers digging in that area and the hypothetical possibility the soil would show up again in a residential yard in the future. This remedial alternative would not cap soil in the Potential Area of Concern B, leaving a possible exposure pathway for lead fragments and unidentified pockets of lead-contaminated soil.

Remedial Alternative 5 is the most protective of the remedial alternatives evaluated. All of the identified Hot Spots Area A soil would be removed to secure off-site landfills. The upper 1-foot of Potential Area of Concern B soil would be excavated and further tested for lead content. A clean soil cap would replace the excavated soil. If testing or visual evidence indicates a pocket of high lead contamination in Area B, that pocket would be further excavated. The human health risk from all identified source areas would be mitigated. However, since contaminated soil could remain beneath the existing PVIC building or deeper in the soil at some unidentified area, it would still be necessary to have a deed restriction requiring that soil tests be done and, if necessary, worker protective precautions taken during future deep excavation.

In anticipation of the City of Rancho Palos Verdes beginning construction on the PVIC expansion shortly after remediation is completed, Alternative 5 also includes extensive

sampling of future pipeline alignments and the future building expansion foundation area. Soil found exceeding the action level of 250 mg/kg total lead would be removed prior to the future City contractor beginning work. During future excavation by the City contractors, the remedial contractor would keep a post remediation crew on-site to test excavated soil just in case unacceptable lead concentrations were encountered

5.2.2 Compliance with ARARs and TBCs

All of the active remedial alternatives can comply with the potential location- and action-specific ARARs. All of the evaluated remedial alternatives except no action can comply with the identified chemical-specific ARARs for lead-contaminated soil and meet the health-based remedial goals.

Only Remedial Alternative 5 addresses the TBC ("To Be Considered" concern) of the City of RPV: that potentially lead-contaminated soil is removed from the areas of trenching for the PVIC expansion and stormwater drain upgrade, and bullets and bullet fragments are removed

5.2.3 Long-Term Effectiveness and Permanence

Remedial Alternative 1, no action, is the least effective of all the alternatives

Remedial Alternative 2, which excavates only the top 1-foot of the identified hot spot areas, is the least effective of the active remedial alternatives

Remedial Alternative 3, which excavates the upper 1-foot of soil from the entire Area of Concern and replaces it with clean soil, would be effective in protection of the public using the site during the foreseeable future for recreational purposes. It is less effective and permanent than Remedial Alternative 5 over the long term because some identified hot spot soil remains that could be exposed during future site uses or excavation activities.

Remedial Alternative 4, which entirely excavates the identified hot spot areas, would be the most effective remedial action in terms of removing the most mass of lead contamination in the least amount of soil. The removal from the site would be permanent. The remaining Potential Area of Concern B would remain as a possible source of future lead contamination, though none was identified in the Remedial Investigation.

Remedial Alternative 5, which entirely excavates the identified hot spots and caps the remaining Area of Concern, provides the most long-term effectiveness and permanence. The contaminated soil hauled off-site would go to a permitted, secure landfill. This remedial alternative would remove the most soil and mass of lead from the site.

5.2.4 Reduction in Toxicity, Mobility, and Volume of Contaminants

Since lead is a basic element, it is not possible to reduce its toxicity. All of the active Remedial Alternatives, i.e., 2 through 5, would remove some volume of lead-contaminated soil from the site to an off-site secure landfill, and the on-site volume would be reduced accordingly. (However, in absolute terms, excavation and disposal does not reduce the volume of contaminated soil, but only transfers it from one location (the site) to another (the landfill).) Estimated volumes of soil to be removed from the site are:

Remedial Alternative 1	-	None
Remedial Alternative 2	-	1,700 tons
Remedial Alternative 3	-	3,600 tons
Remedial Alternative 4	-	3,400 tons
Remedial Alternative 5	-	5,300 tons

As the potential mobility of the lead in the removed soil would be much less in an off-site secure landfill than it would be in the site soil, the removed soil volumes listed above would be less mobile.

On-site, any contaminated soil that was capped would be much less exposed to wind and surface water erosion and therefore less mobile. Remedial Alternative 3 and Remedial Alternative 5 cap the entire Area of Concern (approximately 100,000 square feet) and Remedial Alternative 2 and Remedial Alternative 4 cap or remove only the identified hot spot areas (approximately 30,000 square feet). Remedial Alternative 1 would not reduce mobility.

5.2.5 Short-Term Effectiveness

All of the active Remedial Alternatives involve soil excavation, stockpiling, and hauling off-site. Protection of workers and the surrounding community during implementation can be readily achieved by standard procedures of monitoring, dust control, and worker safety protection. Haul truck traffic on the route from the site to the disposal site(s) will be increased for a short period during remediation activities. The trucks will be sealed and dirt from the site cleaned off the truck tires before they leave the site. Traffic will continue for about 4 weeks for the implementation of Remedial Alternatives 2 and 4, and will continue about 6 weeks for Remedial Alternatives 3 and 5.

5.2.6 Implementability

The equipment and labor required for the remedial alternatives is readily available. Off-site secure landfill disposal facilities exist with sufficient capacity. Permits should be obtainable without undue difficulty since the lead-contaminated soil at this site does not pose a significant risk to workers or the community.

5.2.7 Cost

The PVIC site cost estimates for the remedial alternatives are primarily driven by the volume and extent of lead-contaminated soil, in addition to the level of contamination. Because these factors are not yet accurately determined, the cost estimates provided are primarily intended for comparative purposes, and the eventual final costs will vary, perhaps significantly, from the Feasibility Study estimates shown below:

Remedial Alternative 1	-	Negligible
Remedial Alternative 2	-	\$687,000
Remedial Alternative 3	-	\$1,121,000
Remedial Alternative 4	-	\$974,000
Remedial Alternative 5	-	\$1,430,000

5.2.8 State Acceptance

It is anticipated that the State will not accept "No Action" nor the continued presence of near surface soils above acceptable human health risk levels. The state (DTSC) has determined that remedial actions proposed in the preferred alternative, Remedial Alternative 5, will not adversely impact the site, and recorded that finding in a Negative Declaration, which is presented in Appendix E.

5.2.9 Community Acceptance

The community is eager for a reopening of this valuable facility. Comments made at the March 19, 2002 Public Meeting, held during the thirty-day review period for the RAP, were unanimous in their support of Remedial Alternative 5.

5.3 Preferred Alternative and Rationale for Preference

The preferred alternative is Remedial Alternative 5 (RA5) because it is most protective of human health; most effective and permanent; achieves the greatest reduction in on-site contaminant volume and mobility. It is anticipated that it will be most acceptable to the City, State, and the community. RA5 is neutral compared to other alternatives in terms of compliance with ARARs and implementability, but addresses the City's concerns (TBCs) more effectively than other alternatives.

Because more soil is handled, RA5 has the highest estimated cost, will take slightly longer to implement, and cause more haul truck traffic between the PVIC site and off-site

landfills during implementation. However, the advantages of RA5 appear to greatly outweigh the disadvantages.

6.0 DESCRIPTION OF WORK

This description of work has been prepared to describe the tasks required for implementation of the preferred remedial alternative as described in Section 5.0. As this description has been prepared prior to award of a contract to the remediation contractor, the work descriptions below are necessarily more general in nature than a typical project plan prepared by a remediation contractor already under contract, with subcontractors selected.

The early submittal of this Final RAP will provide the opportunity to resolve reviewers' questions prior to award of the construction contract, and will thus facilitate initiation of the remediation work. It is anticipated that the remedial contractor will provide any additional submittal information required and/or modify, and enhance as necessary, the material included in this Final RAP. A list of anticipated submittals is shown in Appendix A.

6.1 Additional Soil Sampling/Analysis

Soil sampling conducted in two previous site assessments in 1999 and 2001 is described in Section 2.0. Total lead concentrations above 250 mg/kg (ppm), the proposed action level, were detected in less than 10 per cent of the samples analyzed. As shown in previous Figure 2-1, these sample locations, termed "hot spots" are primarily in the vicinity of the existing PVIC building and future PVIC expansion.

More sampling is needed to determine the extent of these hot spots and whether other contaminated areas exist in the soil around the hot spots. The remedial contractor will arrange to have additional sampling and analysis conducted in the hot spot areas and the Area of Concern to better delineate where the soil requiring excavation and management exists on the site. Additional soil sampling will also be conducted in the alignment of future storm drain and utilities construction (see Section 6.3.1) and within the foundation pad footprint of the future PVIC building expansion (see Section 6.3.2). The remedial

contractor will be required to submit for approval a Sampling and Analysis Plan (SAP), Field Sampling Plan (FSP), and a Quality Assurance Project Plan (QAPP), which cover all aspects of the soil sampling and laboratory analysis procedures. It is proposed to use an on-site mobile laboratory to provide analytical results within a short time of taking the samples. An independent, certified fixed laboratory located off-site would be used to verify field results.

There are three phases of soil sampling proposed as part of the remediation work, as follows:

1. Additional sampling prior to beginning soil excavation in order to better locate areas of lead contamination (see Section 6.1.1);
2. Sampling of soil excavations and excavated soil stockpiles during remedial soil excavation (see Section 6.1.2);
3. Post remediation sampling of soil excavated by the City contractors during construction of new storm drains, new utility lines (water, sewer, etc.), and a foundation pad for the new PVIC expansion building and terraces (see Section 6.1.3).

Each of the above phases of proposed soil sampling is described in the following subsections.

6.1.1 Additional Sampling Prior to Beginning Remediation

Additional soil sampling is proposed prior to beginning soil excavation in order to locate soil with lead contamination exceeding the proposed action limit (250 mg/kg total lead) in the following locations.

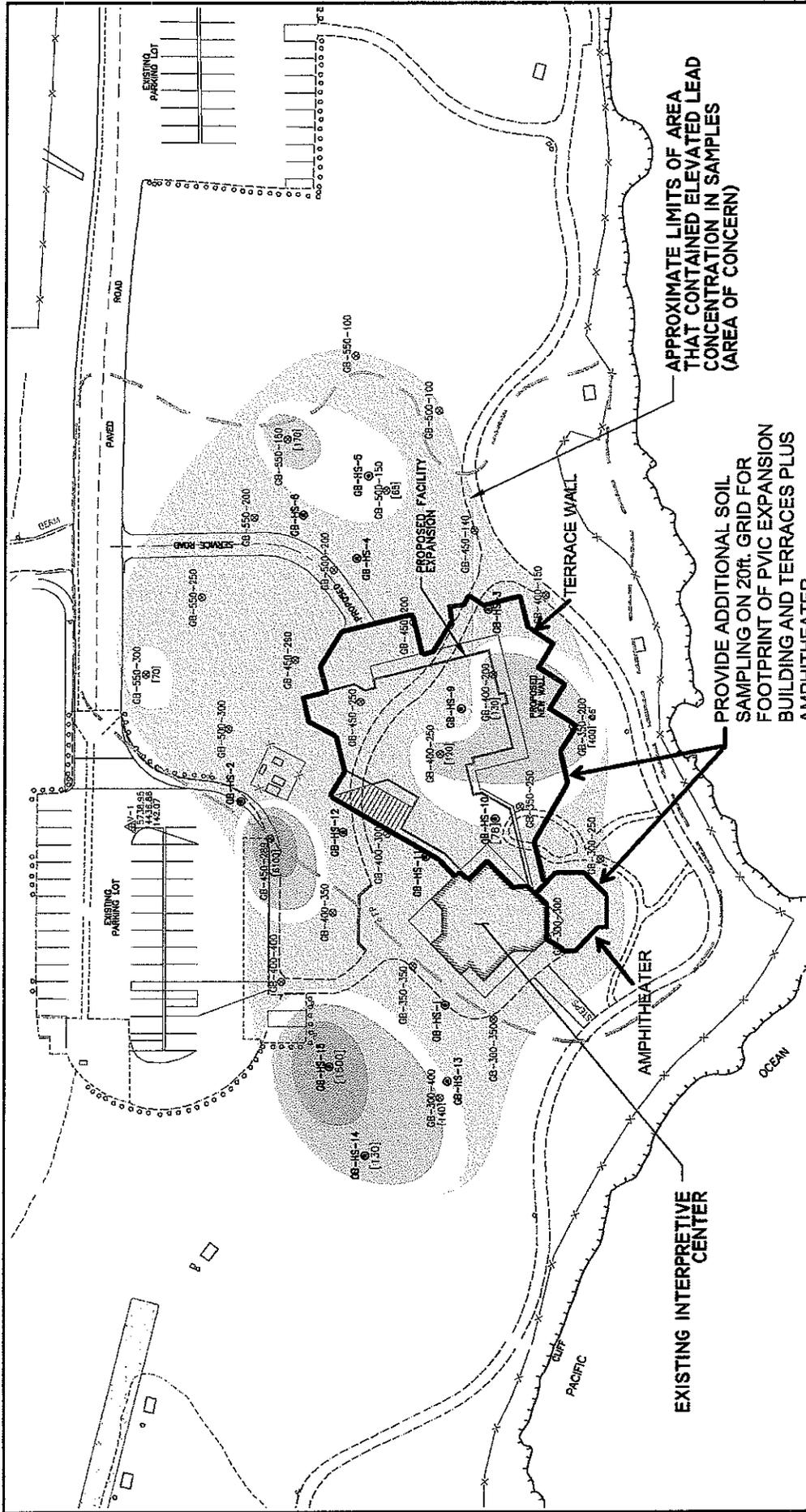
1. The "hot spot" areas;

2. The foundation pad area for the future expansion building and terraces;
3. The alignment of future storm drains "A" and "B"; and
4. The alignment of future utility pipelines.

The suspected "hot spot" areas of lead contamination are shown in previous Figure 2-1. These hot spot areas are approximated on the basis of a few samples conducted during the previous two site investigations, and require further definition as to areal extent and depth. Prior to beginning excavation, sample locations on a 20-foot grid are proposed in and around the hot spot areas. Samples would be taken at 1-, 2-, and 3-foot depths. Where soil with lead contamination exceeding the action limit is found, additional stepout samples would be taken deeper and around that location. Conducting this additional soil sampling prior to starting remedial action at the site will allow the remediation contractor to better plan the soil excavation and management. It is estimated that approximately 270 samples will be needed for this additional soil sampling.

The foundation pad area for the future PVIC building expansion and terraces is shown in Figure 6-1. A 20-foot grid over this area would be surveyed and samples taken to the depth of the future building foundation pad. For estimating purposes, samples are assumed at 1-, 3-, and 5-foot depths at each sampling location. Where "hits" of soil with lead contamination exceeding the action limit are found, the soil would be excavated and properly managed by the remedial contractor during remediation. It is estimated that approximately 180 samples will be needed for this additional soil sampling.

The alignments of the future Storm Drains "A" and "B" are shown in Figure 6-2. These storm drains are part of the future PVIC expansion. Storm Drain B is 12 inches in diameter and about 700 feet of its length is within the potential area of lead contamination concern. Storm Drain A is 36 inches in diameter and about 500 feet of its length is immediately adjacent to the potential area of concern. It is proposed to survey



DATE:	12/01	FILE NAME:	02-SAL-F1G5	PROJECT NO.:	02-SAL-001	
ADDITIONAL SOIL SAMPLING FOR PVC EXPANSION FOUNDATION POINT CENTRE INTERPRETIVE CENTER PALO ALTO STATE UNIVERSITY, MOUNT RANCHO PALOS VERDES, CALIFORNIA						
The Source Group, Inc.					FIGURE:	6-1

GENERAL SITE LEGEND

- PROPOSED EARTH WORK AREA
- JUNE 2001 SOIL SAMPLE LOCATIONS
- SEPTEMBER 1999 SOIL SAMPLE LOCATIONS
- HIGHEST TOTAL LEAD CONCENTRATIONS IN SOIL (250 mg/kg)
- LEAD CONCENTRATIONS IN SOIL ≤ 50 mg/kg > BACKGROUND (AREA OF CONCERN)
- LEAD CONCENTRATIONS IN SOIL $> 1,000$ mg/kg
- LEAD CONCENTRATIONS IN SOIL > 100 mg/kg
- LEAD CONCENTRATIONS IN SOIL > 50 mg/kg

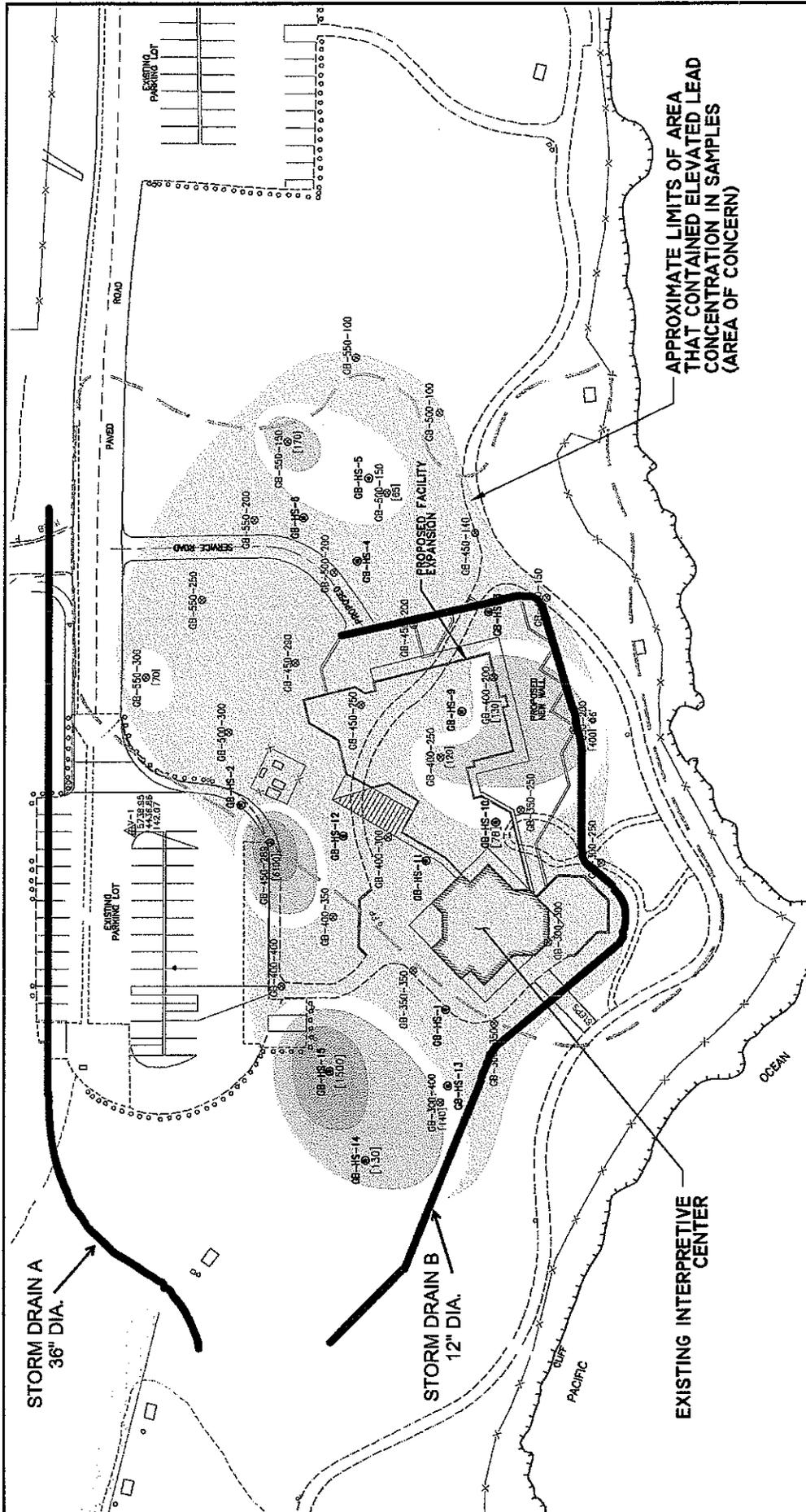
GENERAL SITE NOTES:

- HIGH TOTAL LEAD CONCENTRATIONS IN SOIL FOUND FROM 0.5-1', EXCEPT FOR SAMPLE LOCATION GB-350-200, HIGH CONCENTRATION AT 6'.

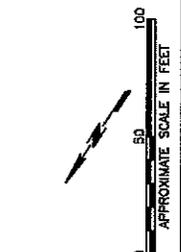
APPROXIMATE LIMITS OF AREA THAT CONTAINED ELEVATED LEAD CONCENTRATION IN SAMPLES (AREA OF CONCERN)

PROVIDE ADDITIONAL SOIL SAMPLING ON 20ft. GRID FOR FOOTPRINT OF PVC EXPANSION BUILDING AND TERRACES PLUS AMPHITHEATER

SCALE: 0 50 100 APPROXIMATE SCALE IN FEET



DATE:	12/01	FILE NAME:	02-SAL-FIGS	PROJECT NO.:	02-SAI-001
APPROXIMATE LOCATIONS OF STORM DRAINS A AND B IN AREA OF CONCERN					
POINT CENTRE INTERPRETIVE CENTER RANCHO PALOS VERDES DRIVE WEST RANCHO PALOS VERDES, CALIFORNIA					
					FIGURE:
					8-2



GENERAL SITE LEGEND

PROPOSED EARTH WORK AREA

JUNE 2001 SOIL SAMPLE LOCATIONS

SEPTEMBER 1989 SOIL SAMPLE LOCATIONS

HIGHEST TOTAL LEAD CONCENTRATIONS IN SOIL (250 mg/kg)

LEAD CONCENTRATIONS IN SOIL ≤ 50 mg/kg $>$ BACKGROUND (AREA OF CONCERN)

LEAD CONCENTRATIONS IN SOIL $> 1,000$ mg/kg

LEAD CONCENTRATIONS IN SOIL > 100 mg/kg

LEAD CONCENTRATIONS IN SOIL > 50 mg/kg

GENERAL SITE NOTES:

1. HIGH TOTAL LEAD CONCENTRATIONS IN SOIL FOUND FROM 0.5-1', EXCEPT FOR SAMPLE LOCATION GB-350-200, HIGH CONCENTRATION AT 6'.

APPROXIMATE LIMITS OF AREA THAT CONTAINED ELEVATED LEAD CONCENTRATION IN SAMPLES (AREA OF CONCERN)



The Source Group, Inc.

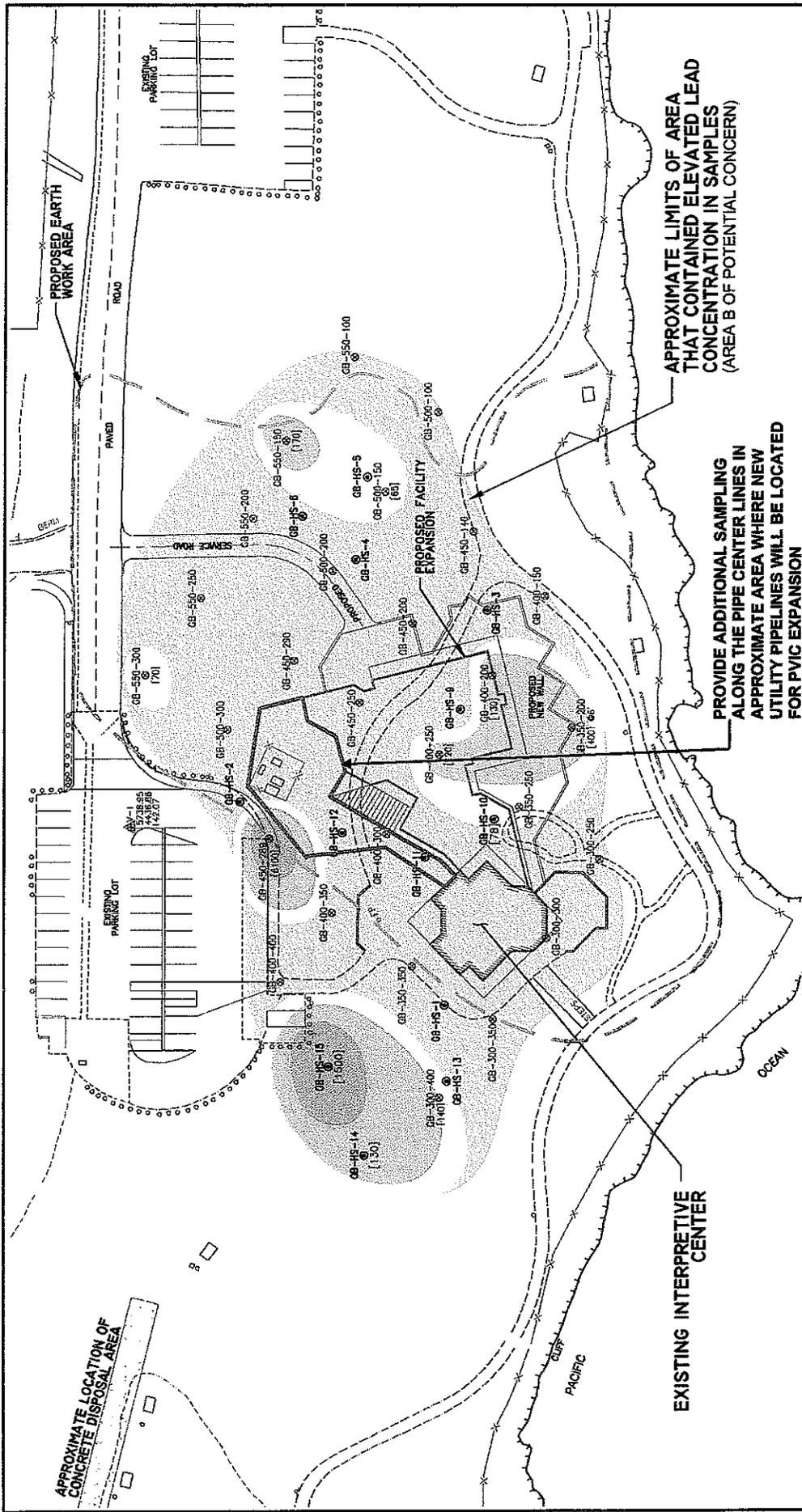
the future storm drain alignments and take soil samples at 20-foot intervals along the pipe centerlines within the Area of Concern. For estimating purposes, it is assumed that samples will be taken at 1-, 3-, and 5-foot depths at each sampling location. Approximately 180 samples are estimated. Where "hits" of soil contamination exceeding the action levels are found, the soil would be excavated and properly managed by the remedial contractor during remediation activities.

The area of future utility pipelines to service the future PVIC expansion building is shown in Figure 6-3. Some existing pipelines will also be removed in this area. It is proposed to survey the future pipeline alignments and take samples at 20-foot intervals along the pipe centerlines within the Area of Concern. The sampling depth would depend on the depth of the future pipeline. Assumptions are that sewer lines are about 6 feet deep, irrigation lines are 1.5 feet deep, and all other lines (e.g., gas, water) are about 4 feet deep. Where "hits" of soil contamination exceeding the action limit are found, the soil would be excavated and properly managed by the remedial contractor during remediation. Approximately 50 samples are estimated.

Descriptions of excavated soil management are provided in subsections 6.6, 6.7, and 6.8.

6.1.2 Sampling Soil Excavations and Stockpiles during Remediation

During remediation, sampling will primarily be conducted to confirm that excavations have removed the soil with total lead concentrations above the action level of 250 mg/kg. As discussed in previous Section 6.1.1, it is intended to extensively sample the soil in the areas of potential contamination prior to beginning excavation to further define the areal extent and depth of soil exceeding the action level of 250 mg/kg. In most cases, the preliminary sampling will define the necessary excavation dimensions and the excavation can proceed in total. The excavation sides and bottom can then be subject to confirmatory sampling. Since lead contamination in the soil at the PVIC site is unevenly



DATE:	12/01	FILE NAME:	02-SAL-FIGS	PROJECT NO.:	02-SAI-001
ADDITIONAL SOIL SAMPLING FOR THE PVC EXPANSION BUILDING UTILITY PIPELINES POINT VICENTE INTERPRETIVE CENTER PALOS VERDES DRIVE WEST RANCHO PALOS VERDES, CALIFORNIA					
					FIGURE:
					6-3

APPROXIMATE LIMITS OF AREA THAT CONTAINED ELEVATED LEAD CONCENTRATION IN SAMPLES (AREA B OF POTENTIAL CONCERN)

PROVIDE ADDITIONAL SAMPLING ALONG THE PIPE CENTER LINES IN APPROXIMATE AREA WHERE NEW UTILITY PIPELINES WILL BE LOCATED FOR PVC EXPANSION

HOT-SPOT AREAS
 LEAD CONCENTRATIONS IN SOIL > 1,000 mg/kg
 LEAD CONCENTRATIONS IN SOIL > 100 mg/kg
 LEAD CONCENTRATIONS IN SOIL > 50 mg/kg

GENERAL SITE LEGEND
 PROPOSED EARTH WORK AREA
 JUNE 2001 SOIL SAMPLE LOCATIONS
 SEPTEMBER 1999 SOIL SAMPLE LOCATIONS
 HIGHEST TOTAL LEAD CONCENTRATIONS IN SOIL (250 mg/kg)
 LEAD CONCENTRATIONS IN SOIL ≤ 50 mg/kg > BACKGROUND (AREA OF CONCERN)

GENERAL SITE NOTICES:
 1. HIGH TOTAL LEAD CONCENTRATIONS IN SOIL FOUND FROM 0.5-1', EXCEPT FOR SAMPLE LOCATION GB-350-200, HIGH CONCENTRATION AT 6'.

GENERAL SITE LEGEND
 PROPOSED EARTH WORK AREA
 JUNE 2001 SOIL SAMPLE LOCATIONS
 SEPTEMBER 1999 SOIL SAMPLE LOCATIONS
 HIGHEST TOTAL LEAD CONCENTRATIONS IN SOIL (250 mg/kg)
 LEAD CONCENTRATIONS IN SOIL ≤ 50 mg/kg > BACKGROUND (AREA OF CONCERN)



distributed, the confirmation sampling will be extended several yards beyond the excavation sides.

So as to mitigate the risk from incidental soil or bullet fragment ingestion by children, the top 1-foot layer of soil would be removed for all areas of potential concern. After excavation of the 1-foot topsoil layer, a visual inspection of the native soil surface would be made for any areas of bullets and/or bullet fragment contamination. If such contamination were found, further excavation would be done to remove the contamination. A cap of clean topsoil would then be placed over the native soil and compacted.

The second type of sampling proposed during the remediation phase is stockpile characterization. Soil would be segregated into hazardous and non-hazardous piles, based on the results of excavation verification sampling, and stockpile sampling. The number of stockpile samples collected would be based on Chapter 9 of EPA SW 846 - *Test Methods for Evaluating Solid Waste, Update III, 1996*. Stockpiles would be characterized for off-site disposal as a RCRA hazardous waste, a California non-RCRA hazardous waste, or a non-hazardous special waste. Soil stockpiles not exceeding the action level of 250 mg/kg total lead would be redispersed on-site as fill below the 1-foot cap level, (e.g., storm drain trenches, building foundation fill, etc.) providing it was otherwise suitable (e.g., free of vegetation and debris).

The on-site laboratory will use an XRF (X-ray fluorescence) instrument to provide rapid real time measurements of the concentration of total lead in soil for screening purposes. XRF instruments are field portable or can be fixed in an on-site mobile laboratory, van, or trailer. Analytical sensitivities are reliable for total lead concentrations over 50 mg/kg. To obtain representative results for soil samples, samples would be field-dried and homogenized prior to analysis. Quality control samples would be sent to a certified fixed laboratory.

6.1.3 Post Remediation Sampling

As discussed in previous Section 6.1.1, the remediation contractor will intensively sample the area of the future PVIC building expansion, plus the alignments of the future storm drains A and B, and the utility pipelines. Soils found to be above the action limit will be removed and properly managed by the remediation contractor during the restoration project. The City contractor(s) would then come on-site to conduct construction-related earthwork activities (storm drains, utilities, and PVIC expansion building pad). During the City contractor's trenching and/or excavation activities, the remedial contractor would leave limited staff on-site to sample excavated soil, as needed, and to deal with contaminated soil above the action limit that may still be encountered, if any. The remedial contractor would properly manage the additional contaminated soil, as described in sections 6.6, 6.7, and 6.8.

6.2 Surveying

The remedial contractor will survey the sampling grids for the additional sampling of potential hot spot areas and sampling of the foundation pad footprint for the future PVIC building expansion. In addition, the remedial contractor will survey the alignment of future storm drains A and B and mark sampling locations at 20-foot intervals along the pipe lengths of potential concern shown in previous Figure 6-2. The remedial contractor will also survey the alignments of the future utility pipes (water, sewer, etc.) and existing utility pipes to be removed within the Area of Concern, and mark sampling locations at 20-foot intervals. The City will provide the remedial contractor all the survey data needed to properly locate the future PVIC expansion construction components discussed above.

Upon completion of excavation activities, the excavation depths and perimeters will be surveyed and a map generated outlining the excavations, based on the survey points. Interested parties could reference this map in the future to determine the limits of the excavations.

6.3 Future Storm Drain, PVIC Building Pad and Utility Pipeline Construction

6.3.1 Storm Drain and Utility Pipelines

Storm drain and utility pipeline construction is not the responsibility of the remedial contractor. However, the City of Rancho Palos Verdes intends to resume construction of the proposed PVIC expansion shortly after site remediation activities are completed. As stated in previous Section 6.1.1, preliminary sampling will be done along the alignment of the future storm drains "A" and "B" and utility pipelines within the Area of Concern. Where "hits" of soil contamination exceeding the action limit are found, the soil will be excavated and properly managed by the remedial contractor during remediation activities prior to the city contractor coming on-site to construct the storm drains and utilities.

The remedial contractor will attempt to identify and remove all contaminated soil from the pipeline alignment prior to the City contractor arrival on-site. However, the possibility exists that the City contractor will encounter some soil with lead concentrations exceeding the action limit. The City is concerned that soil excavated during later trenching excavations for utility pipelines and storm water drains might be characterized as a hazardous waste. Therefore, the USACE and the City have agreed that the remedial contractor will provide sampling technician(s), sample analysis and health and safety monitoring to sample the soil excavated from the storm drain and utility line trenches by the City contractor prior to its use as trench backfill. If a portion of the soil exceeds the total lead action level of 250 mg/kg it will not be used as trench backfill. The remediation contractor will be responsible for proper management and disposal of soil exceeding the total lead action level of 250 mg/kg.

It is important to note that the on-site action level for soil is 250 mg/kg of total lead, which is based on health risk to young children under a hypothetical future residential scenario where the child is exposed to lead contaminated soil every day in a backyard. The action level for an adult construction worker with relatively short-term exposure

(e.g., a few months) is much higher, e.g., over 2000 mg/kg. Therefore, no health risk is anticipated to the City contractor(s) excavating the pipeline trenches from any lead-contaminated soil encountered.

Excess soil is generated by pipeline installation because the pipe itself occupies space formerly filled with soil, and also because soil expands in volume (fluffs up) when it is excavated. This excess soil below the action level of 250 mg/kg total lead should be retained on-site to the maximum extent practicable and used instead of imported fill dirt to replace soil that will be removed from the site during remediation and construction activities.

6.3.2 PVIC Expansion Building Foundation Pad

Construction of the PVIC expansion building foundation pad is not the responsibility of the remedial contractor. As stated in previous Section 6.1.1, preliminary sampling will be based on a 20-foot grid within the footprint of the foundation for the future PVIC building expansion. Where "hits" of soil exceeding the action limit are found, the soil will be excavated and properly managed by the remedial contractor during remediation prior to the City contractor coming on-site to construct the building foundation pad. The remedial contractor will attempt to identify and remove all contaminated soil from the building footprint prior to the City contractor's arrival on-site.

However, the possibility exists that the City contractor will encounter some soil with lead concentration exceeding the action limit. As with the pipeline trenching, the City is concerned that soil excavated during construction of the foundation pad might be characterized as a hazardous waste. Therefore, the USACE and the City have agreed that the remedial contractor will provide sampling technician(s), sample analysis and health and safety monitoring to sample the soil during the foundation pad construction. If a portion of the soil exceeds the action level of 250 mg/kg total lead, it will not be used in the foundation pad, and instead, will be properly managed and disposed of by the remedial contractor.

The previous statement in Section 6.3.1 about no anticipated health risk to construction workers also applies to workers building the foundation pad.

6.4 Clearing and Grubbing

6.4.1 Clearing

Trees, stumps, roots, brush, and other vegetation in areas to be cleared will be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees and other vegetation to be left standing will be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. It is estimated that approximately 2 acres, mostly overgrown vegetation, will require clearing. Special care will be taken to protect any sensitive habitats such as coastal sage scrub and the single plant that is preferred by the El Segundo Blue Butterfly, although this plant does not support a habitat for this butterfly.

Approximately 12 existing trees identified by the City will be removed by the remedial contractor for disposal, or for transplant in the case of a few palm trees. Large trees not removed will be trimmed of lower branches as necessary to allow workers to remove and replace soil around the trees.

6.4.2 Grubbing

Organic and metallic debris shall be removed in areas indicated as excavation areas. It appears that only a small amount of such wood and metal debris exists in the areas to be excavated. Roots, brush, wood and other refuse from the clearing and grubbing operations will be disposed of to a permitted Class III landfill.

A small sewage lift station on the site has a dilapidated fence on two sides. The lift station area has aboveground concrete pads, pipes and appurtances surrounded by small

areas of bare dirt. It is proposed to remove and replace approximately 6 inches of existing bare dirt in this area, replace with clean fill and install a new chain link fence on all four sides of the small lift station to keep out children.

6.5 Soil Removal

Based on DTSC's verbal approval, it is anticipated that the remedial action goal for soil will be a concentration of 250 mg/kg for total lead. This goal is risk based and conservative with respect to protecting human health. Based on LeadSpread results, the baseline risk assessment for this site predicted this preliminary remedial goal (PRG) as protective of a small child resident at the site. It is reported that the California DTSC intends to establish a limit of 255 mg/kg of total lead concentration for school playgrounds. The EPA PRG is 400 mg/kg. All of these limits are based on exposure of a small child to soil. The acceptable limits for adults are higher. Through sampling, it is intended to identify hot spots where soil lead concentration exceeds 250 mg/kg and excavate these hot spots to concentrations of lead at 250 mg/kg, or less.

An additional concern at this site is bullet lead fragments. There is no quantifiable risk to a child swallowing a bullet fragment, and no record of it ever having occurred at the PVIC site in the 15 years the site has been in public use. Nevertheless, the fragments are a potential concern and it is an objective of this project to prevent child exposure to lead fragments by placing at least a 1-foot soil cover over soil potentially containing such fragments. Generally this will involve removing the top 1 foot of existing soil in the Area of Concern and replacing it with clean topsoil brought from off-site or clean on-site soil. The Area of Concern is shown in previous Figure 2-1 as Area B, shaded green.

6.5.1 Excavation

At least 48 hours prior to initiation of excavation activities, all relevant regulatory agencies and interested parties will be contacted, including the California DTSC, the City of Rancho Palos Verdes, and the U.S. Army Corps of Engineers. Three excavation

methods for the remediation of soil at the PVIC site (described in the following paragraphs) are anticipated.

Excavation of hot spot soil would involve the digging of a pit to the estimated outside dimensions and depth of the contaminated soil. It is intended to extensively sample the suspect areas prior to beginning excavation to further define the areal extent and depth of the soil exceeding the lead concentration limit. In many cases, the preliminary sampling will define the necessary excavation dimensions and the excavation can proceed in total. In some cases, at the option of the remedial contractor, excavation will be done in lifts, e.g., 6 inches up to 1 foot at a time, in order to perform intermediate sampling to determine the depth of the contamination. At the conclusion of excavation additional sampling of the excavation bottom and sides will be done to confirm that lead concentrations in the remaining soil are below remedial action levels, i.e., below 250 mg/kg. Since lead contamination in the soil at the PVIC site is unevenly distributed, the confirmation sampling will be extended several yards beyond the excavation sides.

After the excavation is completed and confirmation sampling done, the excavation will be filled with clean fill and compacted. It is proposed that excavated soil with a lead concentration level below 250 mg/kg could be used for fill at the site for areas where fill is needed below a depth of one foot.

Excavation of the top layer of soil followed by capping would involve removing a top layer of existing soil (1 foot for the purpose of this RAP) from the Area of Concern shown in previous Figure 2-1. Prior to removal, the existing soil would be graded to the approximate elevations required by the PVIC Expansion Plan. It is reported by the City of Rancho Palos Verdes that most of the site grading for the PVIC expansion project was completed in 1999 prior to terminating the construction project, and that the present soil surfaces are close to the final finish grades. This will have to be confirmed by a future survey. The USACE contractor, the City of Rancho Palos Verdes contractor(s), and the PVIC expansion design-engineering firm will meet and plan any additional grading

required. The excavation of soil required to make room for the cap would be done in one lift of 1 foot.

The soil removed would be properly stockpiled in the parking lot area and tested there. After excavation of the 1-foot topsoil layer, a visual inspection of the native soil surface would be made to look for any areas of bullets and/or bullet fragment contamination. If such were found, further excavation would be done to remove the bullets or fragments. The cap of clean topsoil would then be placed and compacted over the native soil.

Excavation of building foundation pad is anticipated if contaminated soil above the action limit of 250 mg/kg total lead is identified beneath the future PVIC building and terraces footprint. This was discussed in Section 6.3. Again, it is anticipated that clean fill, suitable for foundation fill and less than 250 mg/kg total lead, could be used from elsewhere on-site.

6.5.2 Work Area Limits

The approximate work area limits for remedial work will be within the Area of Concern indicated on previous Figure No. 2-1. Since the PVIC site is presently not open to the public and most of the former landscaping is overgrown with weeds, these limits are flexible and subject to modification with the concurrence of the City of Rancho Palos Verdes.

The asphalt parking lot nearest the Exhibit Building is available for temporarily stockpiling excavated soil. A flat soil pad area located uphill and adjacent to the road that connects this parking lot with the parking lot near the entrance to PVIC is available for parking contractor's trailers, equipment storage, etc. The contractor will be responsible for temporary security fencing and signage to keep unauthorized persons out of the work area.

6.5.3 Confirmation Sampling

The remedial contractor will be required to submit for approval a Sampling and Analysis Plan (SAP), a Field Sampling Plan (FSP), and a Quality Assurance Project Plan (QAPP) that cover all aspects of the soil sampling and laboratory analysis procedures. Confirmatory sampling of hot spots will be done during excavation to determine the depth and extent of soil that exceeds the remedial goal of 250 mg/kg. The number of samples taken will depend upon the randomness of the contaminant distribution. "Step out" sampling is planned in which samples are taken beyond the excavation perimeter to confirm that a hot spot does not extend further. This sampling will complement the existing sample results, and will be minimized by the extensive pre-excavation sampling event.

6.6 Temporary Storage of Excavated Soil

6.6.1 Stockpile Location

It is anticipated that one or both of the existing asphalt-paved parking lots will be used for stockpiling of soil. The paved surface would reduce the potential for leaching of soluble lead from the stockpiles into underlying subsurface soils.

6.6.2 Stockpile Containment

Visqueen plastic would be spread on the pavement to further reduce the potential for soluble lead to leach from the stockpile. The tops of the piles would be flattened to allow easier access and a more statistical approach for sampling. At the end of each working day, and upon completion of excavation activities, the piles would be covered with Visqueen plastic. The covers would be tied down and anchored to prevent blow away of soil.

A temporary continuous 1-foot high barrier wall of impermeable Visqueen plastic would also be constructed around the perimeter of each pile to prevent soil erosion and sedimentation of potentially lead-contaminated soil. The piles would remain protected in place from wind and rainfall erosion while appropriate soil characterization and profiling is completed to determine to which, if any, waste disposal facilities the soil would be sent.

6.6.3 Stockpile Characterization

Soil would be segregated into hazardous and non-hazardous piles, based on the results of excavation verification sampling, and stockpile sampling. The number of stockpile samples collected would be based on Chapter 9 of EPA SW 846 – *Test Methods for Evaluating Solid Waste, Update III, 1996*

An on-site mobile laboratory using XRF analysis could be used to reduce turn-around time for sample analysis. An expedited turn-around time would facilitate identification of areas requiring additional excavation, thus reducing downtime and additional mobilization/demobilization time required for equipment and crew.

Three tests may be used by a fixed certified laboratory to classify lead-contaminated soil for disposal to a Class I or Class III landfill:

1. Total lead concentration by USEPA Method 6010 (or 6020).
2. California Title 22 WET (Waste Extraction Test) STLC (California Solubility Test) procedure for soluble lead.
3. RCRA Toxicity Characteristic Leaching Procedure (TCLP) protocol for soluble lead.

To obtain a reasonable correlation between tests 1, 2, and 3, as shown above, it is important that the laboratory use a homogeneous sample. The container in which the sample arrives (e.g., boring sample sleeve, glass container, etc.) should be homogenized and then divided into portions for analytical testing.

The solubility tests, STLC and TCLP, are intended primarily to protect groundwater from dissolved lead contamination. These tests are not relevant to soil on-site at PVIC because there is no groundwater beneath the site; however they are relevant to soil hauled off-site for disposal at a landfill where groundwater may be beneath the site. Based on the results of these tests, soil will be classified for off-site disposal as a RCRA hazardous waste, a California non-RCRA hazardous waste, or a non hazardous waste.

None of these laboratory tests measure the presence of whole bullets and/or large bullet fragments in the soil. Such large objects will first be removed in the laboratory by sieving out.

6.7 Off-Site Transport

The remedial contractor will designate one person to act as the Transportation and Disposal Coordinator (TDC) for this contract. The TDC will serve as the point of contact for all environmental regulatory matters related to soil transportation and have overall responsibility for total environmental compliance at the site including, but not limited to: accurate identification and classification of hazardous waste and hazardous materials; determination of proper shipping names; identification of marking, labeling, packaging and placarding requirements; completion of waste profiles, hazardous waste manifests, bills of lading, exception and discrepancy reports; and all other environmental documentation.

The contractor and or subcontractors transporting hazardous materials will possess a current certificate of registration issued by the Research and Special Programs

Administration (RSPA), U.S. Department of Transportation (USDOT), when required by 49 CFR 107, Subpart G. Waste soil transported off-site will be transported in accordance with local, state and federal laws and regulations for that waste soil classification. The different waste soil classifications are discussed in the following Section 6.9. Proper shipping names will be used as required by 49 CFR 172, Section 101.

Drivers staffed for this project will have all the necessary US DOT training per 49 CFR 172. It is anticipated that the transporter will use trucks capable of transporting up to 26-ton loads. All trucks should be inspected by the California Highway Patrol and have the required insurance. Trucks will be covered and secured as required by law.

The remedial contractor will obtain a state EPA ID # from the DTSC in the name of the generator for shipment of non-RCRA hazardous waste from the site. If a federal EPA ID # becomes necessary, the remedial contractor will apply for this by submittal of EPA Form 8700-12, or other applicable form.

Haul routes will use major highways and paved roads and will be planned to minimize impact on local citizens and area traffic. Trucks will be washed free of soil prior to leaving the site. Traffic control will be implemented at the entrance to the site off Palos Verdes Drive as necessary to protect motorists. Drivers will carry CB radios or cellular phones for accessibility at all times. In case of accident and/or spill Emergency Response Plans and Spill Response Plans will be in place and rapidly implemented. Drivers will be regularly trained in these procedures. All spill cleanup equipment will be kept on the trucks and properly maintained. Many other detailed transport requirements are not listed here for the sake of brevity, but will be part of the future remediation contract.

A possible haul route from the site may be south on Palos Verdes Drive, east on Western Avenue, South on Pacific Coast Highway to the Harbor Freeway. This was the haul route reportedly used in 1999 to haul lead contaminated soil from the site.

6.8 Disposal of Excavated Soil

Excavated soil may be disposed in several ways depending upon the total concentration and solubility of the lead contamination contained in the soil. There are four possible classifications for the soil as follows:

1. Soil is not a hazardous waste. This soil can be redispersed on-site. This soil may be redispersed on-site beneath 1-foot depth below finish grade if the total lead is below the proposed action level of 250 mg/kg.
2. Soil is not a hazardous waste, but is a California-regulated material, i.e., total lead concentration is between 350 and 1000 mg/kg and the soil does not exceed the leachability limit for lead of 5 mg/L by the CA STLC test. This soil can be disposed at a secure Class III landfill that is permitted to accept this "special waste." Several such landfills are available in the Los Angeles area.
3. Soil is a California, but not a RCRA, hazardous waste. This soil must be disposed to a Class I landfill as a California non-RCRA hazardous waste.
4. Soil is a RCRA hazardous waste and must be disposed to a Class I landfill as a RCRA hazardous waste.

Each of the soil stockpiles will be characterized into one of the classifications above.

Based on previous soil sampling results, it is anticipated that very little of the soil hauled off-site will be a RCRA hazardous waste. Possibly about one third of the soil hauled off-site will be a California, but not a RCRA, hazardous waste and the remainder, a regulated material but not a hazardous waste.

The classification of the excavated soil is important in the cost of haul and disposal. There are two Class I disposal sites in California, one at Kettleman Hills and one at Buttonwillow. These Class I sites charge about twice as much to dispose of a RCRA hazardous waste as a California-regulated hazardous waste. There are several Class III secure landfills in the greater Los Angeles area that are permitted to accept non-hazardous "special waste" containing lead. Transport and disposal to these landfills is the least costly off-site disposal alternative.

It is anticipated that a significant percentage of the soil excavated will be non-hazardous, i.e., under the 250 mg/kg proposed action level protective of human health. This soil can be utilized on-site within the Area of Concern for fill at depths below 1 foot beneath soil surface finish grade, and/or beneath buildings, paved roads and other structures that act as a "cap" to prevent exposure to bullet fragments, if any, that may be present.

It is important to emphasize that there is no groundwater resource beneath the PVIC site. The State leachability test for lead in soil (CA Title 22 WET STLC), which is protective of groundwater, is not relevant to soil left on-site at PVIC. The State leachability test is relevant only to soil taken off-site for disposal elsewhere.

6.9 Replacement Soil Fill and Compaction

Soil removed to off-site disposal sites will be replaced with clean fill dirt and, in addition, some of the soil excavated and found to be below the action level of 250 mg/kg would be redeposited on-site as fill within the Area of Concern at depths greater than 1 foot below the soil surface and beneath structures. The replacement fill soil will be placed and compacted in accordance with future specifications agreed upon between the USACE and the City of Rancho Palos Verdes as appropriate for the filled area use, e.g., future building or road subgrade, landscape, or other.

6.10 Site Restoration

In accordance with future agreed specifications, the filled areas will be hydro-seeded by the remedial contractor with grass seed species appropriate for the area to achieve post remediation erosion control. The City will specify the grass seed species to be planted. A subsurface erosion control blanket and surface mulching will be used as appropriate.

The soil will be fertilized as necessary to establish and maintain the grass. This grass cover is primarily for the purpose of erosion control during the period prior to completion of the PVIC expansion building in 2003. A temporary irrigation system will be installed and used for approximately 1 year for the purpose of establishing the grass. The City of Rancho Palos Verdes will be responsible for irrigation of the seeded areas.

The remedial contractor will discuss with the City those areas that the City does not want seeded because the City plans to have its contractor(s) move on-site shortly to begin construction, e.g., the PVIC expansion building foundation pad.

Approximately 12 trees have been tagged by the City for removal by the remediation contractor. Two of these trees are palms that will be transplanted to other areas on-site. Ten of the trees will be replaced by the remedial contractor at a cost of approximately \$500 each (the cost is given to indicate the approximate maturity of the purchased replacement trees). Coastal sage scrub will be tagged and protected in place. A one-meter high wooden barrier will be erected to protect the single plant preferred by the El Segundo Blue Butterfly.

The remedial contractor will construct a chain link fence and gate 5 feet high around the existing small sewage lift station. The remedial contractor will repair any damage caused by the remedial contractor to structures and pavement. Paved areas will be cleaned and all excess and waste materials removed.

6.11 Worker Protection

All remedial contractors working on-site must demonstrate that each individual is OSHA-trained to work with hazardous materials/waste, in compliance with CAL-OSHA 5192, Federal 29 CFR 1920.120, and CFR 265.16. A site-specific Health and Safety Plan will be prepared to assess both physical risks and risks from exposure to lead-contaminated soil; safety equipment and operating procedures necessary to mitigate these risks will be outlined. A designated Health and Safety Officer will ensure that each worker has reviewed and signed the plan prior to working at the site; regular safety meetings will be held to maintain safety awareness at the site.

Personal protective equipment such as gloves, hard hats, overalls, respirators (if needed), and steel-toed shoes will be worn for protection according to specifications in the site-specific Health and Safety Plan.

For workers exposed to air potentially containing lead contaminated particulates (e.g., dust) the highest 8-hour average of lead permitted in air is $50 \mu\text{g}/\text{m}^3$. This is the highest level of lead in air to which field personnel may be permissibly exposed over an 8-hour workday. However, since this is an 8-hour average, short exposures above the Permissible Exposure Limit (PEL) are permitted so long as for each 8-hour workday the average exposure does not exceed this level. The maximum permitted average exposure to lead for a 10-hour workday is $40 \mu\text{g}/\text{m}^3$.

Initial personal air monitoring will be conducted on at least two representative field personnel using integrated sampling pumps in accordance with NIOSH Method 7082 (inorganic lead). The duration of sampling will be done to enable each field personnel's exposure level to be reasonably represented by at least one full shift (at least 7 hours). A laboratory accredited by the American Industrial Hygiene Association will analyze samples. If this initial determination shows that a reasonable possibility exists that any field personnel may be exposed, without regard to respirators, over the action level for

lead of $30 \mu\text{g}/\text{m}^3$ averaged over an 8-hour day, an air monitoring program will be implemented.

An Initial Site Entry was conducted by the Source Group prior to conducting sampling activities in June 2001. No unusual site features relevant to health and safety were noted at the site at that time. Another Initial Site Entry will be conducted by the remediation contractor prior to development of their Health and Safety Plan. Except for perhaps some extremely minor amounts of laboratory chemicals that may be brought on-site for on-site soil sample analysis purposes, it is not anticipated that hazardous materials (chemicals) will be used on-site.

Work around heavy equipment entails the possibility of excessive noise. Where excessive noise may be encountered, sound levels will be measured initially on-site and whenever new tasks are started or additional equipment is brought onto the site that has not previously had its sound level quantified. If monitoring indicates average noise exposures in excess of 85 A-weighted decibels dBA, employees will be required to use hearing protection, and will have access to a choice of hearing protection such as earplugs or earmuffs at all times. Engineering controls, such as mufflers and baffles, will be utilized when feasible to reduce noise.

6.12 Surface Water Protection

In the area where earthwork is being conducted the remedial contractor will effectively prevent erosion and control sedimentation from storm water through approved methods including, but not limited to, diversion ditches, benches, berms, and any measures required by area wide plans under the Clean Water Act and local ordinances. Stockpiled soil will be covered and surrounded by a berm to prevent storm water run-off and run-on. Earthwork will be planned and conducted to minimize the duration of exposure of unprotected soils. Clearing of areas will progress in reasonably sized increments as needed to minimize the exposed soil area. It is anticipated that site earthworks will be conducted during the dry season.

6.13 Groundwater Protection

Although, as stated in Section 1.3.3 and in the Remedial Investigation, there is no aquifer beneath the site, soils will be stockpiled on the asphalt parking lot on a plastic liner and covered with a weighted plastic sheet to mitigate the possibility of both fugitive emissions and leaching of lead into the subsurface.

6.14 Air and Noise Protection

Air emissions will be generated from the proposed field activities (excavation, stockpiling, grading, loading/unloading of soil to/from trucks, hauling of soil) in the form of (1) particulates (e.g. fugitive dust) and (2) construction equipment and vehicle exhaust. Dust could be generated by the following activities:

1. Entrained dust from vehicles traveling on paved roads
2. Entrained dust from construction equipment traveling on unpaved surfaces in construction areas
3. Fugitive dust from bulldozing, grading and scraping
4. Fugitive dust from handling of excavated material, such as dropping material into haul trucks
5. Fugitive dust from wind erosion of disturbed areas and storage stockpiles.

Dust generated at the site could potentially contain lead. The construction heavy equipment and vehicle exhaust would contain CO, VOC, NO_x, SO_x and PM¹⁰.

South Coast Air Quality Management District (SCAQMD) Rule 403 prohibits fugitive dust emissions that remain visible in the atmosphere beyond the property line. The rule also requires persons conducting active operations to utilize one or more of the applicable best available control measures to minimize fugitive dust emissions from each fugitive dust source type that is part of the active operation. If the action level for dust is

exceeded and or dust emanating from the site operations is visible at the property line, dust suppression actions will be taken, e.g., wetting down the soil, covering stockpiles, halting operations, covering of trucks immediately upon filling. Control measures will be used in accordance with Tables 1 and 2 of Rule 403 "Best (Reasonable) Available Control Measures for High Wind Conditions" and "Dust Control Actions for Exemption from Paragraph (d) (4)," respectively. Workers will be required to wear respiratory protection if dust (PM¹⁰) levels are exceeded.

Soil excavation and handling conducted in 1999 at the site monitored particulates emissions and reported no exceedances. The soil is largely clay, which tends to be plastic and to create little dust when disturbed.

Heavy equipment and trucks will generate noise during on-site remediation activities. This noise will be short-term over a period of about six weeks. All standard noise attenuation equipment, such as mufflers and baffles, will be utilized. No site work will be conducted between the hours of 7 P.M. and 7 A.M. Haul trucks will be scheduled to leave and arrive during off-peak traffic hours to the maximum extent.

6.15 Deed Restriction

The proposed remedial alternative includes a deed restriction. Deed restrictions are binding on current and subsequent property owners and remain in effect until they are formally removed or modified. The deed restriction at the PVIC site would be necessary because lead-contaminated soil that could be encountered in future land use scenarios may remain beneath the existing PVIC exhibit building, and also in unidentified pockets at depths beneath the proposed soil cap and PVIC building expansion foundations.

Previous assessments and extensive additional sampling proposed under this remedial alternative constitute an exceptional effort to locate pockets of lead contamination for removal. However, the original bullet stop soil berm was spread so randomly in the 1983

construction of PVIC that it is unrealistic to expect that every small pocket of lead contamination will be located and removed from below the soil surface.

The deed restriction provisions will be agreed upon between the DTSC and the City of Rancho Palos Verdes. Discussions were initiated on this issue in mid-February 2002. It is assumed that the restrictions will be worded such as to protect human health and the environment during any future use and activities; stating simply that lead-contaminated soil may remain below the existing PVIC exhibit building and also in pockets at depths elsewhere in the Area of Concern. During future soil intrusive activities such as excavation, trenching, removal, drilling, etc., in the Area of Concern, precautions should be taken to measure lead levels, protect excavation workers if necessary, and properly manage and dispose of the excavated soil, if necessary.

DTSC has reviewed the proposed action level for total lead concentration of 250 mg/kg as protective of public health and verbally indicated approval. DTSC, the City of Rancho Palos Verdes, and the USACE will review the work plans submitted by the remedial contractor prior to beginning work to ensure that the work plans are compatible with agreed upon stipulations in proposed deed restriction.

7.0 PROPOSED PROJECT SCHEDULE

The following schedule shows the estimated duration in working days starting after receipt of the Notice to Proceed to the remediation contractor on or about April 15, 2002. This proposed schedule is shown in Figure 7-1.

Action	Duration	2002
		Tentative Dates
1. Preparation and Submittal of Draft Work Plans (WP), Health and Safety Plan (HSP), Field Sampling Plan (FSP), Sample Analysis Plan (SAP), Quality Assurance Project Plan (QAPP) and other documents to USACE and DTSC.	30 days	4/15-5/14
2. Plans reviewed and approved by City of Rancho Palos Verdes, DTSC, and USACE.	30 days	5/15-6/14
3. City of Rancho Palos Verdes and DTSC develop Deed Restriction language.	As	Needed
4. City of Rancho Palos Verdes submits proposed Deed Restriction to DTSC for approval.		7/05
5. Deed Restriction approved and entered.		8/02
6. Remedial contractor procures vendors and subcontractors and permitting.	60 days	4/15-6/14
7. Temporary field facilities established.	11 days	6/03-6/14
8. Labor and equipment mobilized to site.	As	Needed
9. Site surveyed.	11 days	6/03-6/14
10. Additional on-site sampling to define contamination in hot spots, future storm drain, future utilities and future foundation areas.	14 days	6/14-6/28
11. Clear and grub work areas.	14 days	6/14-6/28
12. Perform remedial work, e.g., soil excavation, stockpiling, characterization, removal/disposal, backfilling, etc., of identified contamination.	60 days	7/01-8/30

			2002
	Action	Duration	Tentative Dates
13.	Remediation contractor demobilizes most remedial labor and equipment.		8/30
14.	City of Rancho Palos Verdes contractor for the PVIC expansion does soil excavation work for building foundations, storm drains, utilities, etc.	60 days	9/02- 10/31
15.	Remedial contractor personnel provide post remediation sampling/analysis of soil excavated by city contractor doing pipelines and building foundations and removes/ disposes of soil found to exceed allowable lead limit, if any.	60 days	9/02- 10/31
16.	Remedial contractor provides closure plan and other completion documentation.		11/08

Figure 7-1. 2002 PVIC Restoration Project Schedule

Action Item #	Action	April	May	June	July	Aug	Sept	Oct	Nov
	Work Plans by Remedial Contractor	■							
1	Plans Reviewed by DTSC, USACE		■						
2	Develop Deed Restriction Language		(As Needed)						
3	Submit Draft Restriction				◆				
4	Deed Restriction Approved					◆			
5	Procure Subs and Vendors		■						
6	Temporary Field Facilities			■					
7	Mobilize Labor/Equipment		(As Needed)						
8	Survey, as Needed			■					
9	Additional On-site Sampling			■					
10	Clear/Grub Work Areas			■					
11	Perform Remedial Work				■	■			
12	Partially Demobilize						◆		
13	City of RPV Soil Excavation							■	
14	Remedial Contractor Samples/Disposal							■	
15	Closure Documentation								◆

8.0 REFERENCES

LA County, 2000. Phase I Environmental Assessment Report, Point Vicente Interpretive Center, February 23, 2000.

SAIC, 2001 Draft Feasibility Study, Point Vicente Interpretive Center, December 24, 2001

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001. (Prepared by The Source Group Inc., for SAIC.)

The Source Group Inc., 2000. Site Assessment Report, Point Vicente Interpretive Center, July 27, 2000.

The Source Group Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 15, 2001.

VPI, 2000. Lead Bullets and Shot Corrode, but Lead Stays Put, Virginia Tech News, 2000, www.technews.vt.edu/Archives/2000/Nov/00351.html.

APPENDIX A

PROPOSED REMEDIAL CONTRACTOR SUBMITTALS

REMEDIAL CONTRACTOR SUBMITTALS

The remedial contractor would provide any additional submittal information required and/or modify and enhance as necessary the material included in this RAP. Anticipated submittals include:

1. Project Work Plan:
 - a. Schedule of activities
 - b. Excavation procedure and equipment proposed
 - c. Confirmation soil sampling and laboratory analyses
 - d. Excavated soil management plan
 - e. Haul routes
 - f. On-site verification sampling design
 - g. Decontamination procedures
 - h. Spill Contingency Plan
2. Site Specific Health and Safety Plan
3. Field Sampling Plan
4. Sample Analysis Plan
5. Quality Assurance Project Plan
6. Environmental Protection Plan
7. EPA Form 8700-12, Notification of Hazardous waste Activity
8. Training and medical certifications
9. Resumes of key personnel
10. Permits/licenses and other submittals that would be required during and/or following the field activities, including:
 - a. Shipping documents and packaging certifications
 - b. Sample Analysis and Chain- of- Custody Reports
 - c. Exception Reports
 - d. Closure Report

APPENDIX B

RESPONSES TO PUBLIC COMMENTS

RESPONSES to PUBLIC COMMENTS

Three public comments were made on the Remedial Action Plan during the thirty-day review period, February 26 to March 28, 2002.

Written Comments

A written comment from Mr. Vic Quirarte, resident of Rancho Palos Verdes and docent at PVIC, stated that he wholeheartedly supported implementation of Remedial Alternative No. 5 to restore PVIC. This was the only written comment received from the public.

Verbal Comments

Mr. Quirarte reiterated his written comment to the Rancho Palos Verdes City Council at the public meeting on PVIC held as a hearing March 19 during the council meeting. Mr. Quirarte stated that he believed that Remediation Plan No. 5 is the best plan and should be implemented. He appreciated efforts, so far, by the agencies involved as well as the work of the RPV staff, and stated that this is an ideal situation where all concerned worked together to get the job done.

Mrs. Joan Barry, resident of Rancho Palos Verdes, stated her support for implementation of Remedial Alternative 5 for cleanup of PVIC and appreciation of the work done to reach this point.

These were the two verbal comments received. A videotaped record of the March 19 City Council Meeting where these comments were made is available on the City website at the following address:

<http://showtime.palosverdes.com:3920/ramgen/rpv/ipvcc-2002-03-19.rm>

Response: no technical response is required. The support expressed in these public comments reflects that observed throughout the Rancho Palos Verdes community during the period of research undertaken in preparation for developing the remedial alternatives and writing this Remedial Action Plan.

APPENDIX C

ADMINISTRATIVE RECORD INDEX

Table of Contents for Administrative Record for Point Vicente Interpretive Center (PVIC) Restoration April 16, 2002

Record Number	Date	Author	Recipient	Title of Document
1	16-Nov-99	Fred Clark, The Source Group, Inc.	City of Rancho Palos Verdes, Dept. Public Works, Dean Allison	Interim Removal Site Assessment Report and Workplan
2	23-Feb-00	Los Angeles County Dept. Public Works	Los Angeles County Dept. Public Works	Phase I Environmental Site Assessment Report PVIC
3	27-Jul-00	Fred Clark, The Source Group, Inc.	City of Rancho Palos Verdes, Dept. Public Works, Dean Allison	Site Assessment Report Point Vicente Interpretive Center
4	26-Oct-00	Gen. Madsen, U.S.Army Corps of Engineers	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Final (Approved) Supplemental Inventory Project Report for Point Vicente Military Reservation
5	21-Mar-01	Fred Clark, The Source Group, Inc.	City of Rancho Palos Verdes, Dept. Public Works, Dean Allison	Revised Remedial Investigation and Feasibility Study Workplan
6	1-Jun-01	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Corps of Engineers, Sacramento District, Jerry Vincent, PM	Draft Site Ownership and Operational History Report for PVIC
7	26-Sep-01	Paul Gurian- General Services Administration	Science Applications International Corp.	Final Scope of Work for Point Vicente RI/FS/RAP/CRP
8	15-Oct-01	Fred Clark, The Source Group, Inc.	City of Rancho Palos Verdes, Dept. Public Works, Dean Allison	Draft Additional Site Assessment Report, Point Vicente Interpretive Center
9	19-Nov-01	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Kickoff meeting - Minutes of Meetings November 19, 2001
10	30-Nov-01	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Monthly Progress Report No. 1 from Science Applications International Corp.
11	31-Dec-01	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Monthly Progress Report No. 2 from Science Applications International Corp.

Table of Contents for Administrative Record for Point Vicente Interpretive Center (PVIC) Restoration April 16, 2002

Record Number	Date	Author	Recipient	Title of Document
12	8-Jan-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Technical Meeting-Minutes of Meeting, January 8, 2002
13	8-Jan-02	Fred Clarke, The Source Group, Inc. Prepared for SAIC.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Remedial Investigation for PVIC
14	8-Jan-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Feasibility Study for PVIC
15	8-Jan-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Community Relations Plan for PVIC
16	22-Jan-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Remedial Action Plan for PVIC
17	31-Jan-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Monthly Progress Report No. 3 from Science Applications International Corp.
18	4-Feb-02	Omo Patrick, DTSC, Cypress	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	DTSC comments of Draft FS, RI, RAP, and Ecological Risk Assessment
19	11-Feb-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Technical Review Meeting on Comments on Draft Documents - Minutes of Meeting February 11, 2002
20	23-Feb-02	Dr. Joyce Clarke, Science Applications International Corp.	Mailed to Palos Verdes Community Mailing list provided by DTSC	Fact Sheet No. 1 on PVIC Restoration
21	25-Feb-02	City of Rancho Palos Verdes, Public Works Dept, Dean Allison	Public notice in local newspaper	Published Notice on Repository for PVIC Draft Final Documents, Review Period, and Public Meeting

Table of Contents for Administrative Record for Point Vicente Interpretive Center (PVIC) Restoration April 16, 2002

Record Number	Date	Author	Recipient	Title of Document
22	25-Feb-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Final Remedial Action Plan for PVIC
23	26-Feb-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Final Remedial Investigation Report for PVIC
24	27-Feb-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Final Feasibility Study for PVIC
25	28-Feb-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft Final Community Relations Plan for PVIC
26	1-Mar-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District,	Monthly Progress Report No. 4 from Science Applications International Corp.
27	6-Mar-02	Omo Patrick, DTSC, Cypress	U.S. Army Corps of Engineers, Los Angeles District,	DTSC comments on Draft Health Risk Assessment
28	15-Mar-02	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM		Unsigned Memorandum of Agreement
29	19-Mar-02	Omo Patrick, DTSC, Cypress	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Draft DTSC CEQA, Negative Declaration
30	19-Mar-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Public Meeting Presentation Slides
31	25-Mar-02	Dr. John Moeur, U.S. Army Corps of Engineers Los Angeles District	US Fish and Wildlife Dept.	Final letter to Fish and Wildlife about finding no habitat at PVIC for the El Segundo Blue Butterfly and the Palos Verdes Blue Butterfly.

Table of Contents for Administrative Record for Point Vicente Interpretive Center (PVIC) Restoration April 16, 2002

Record Number	Date	Author	Recipient	Title of Document
32	26-03-02	Dr. Rebecca Chou, Regional Water Quality Control Board, Los Angeles Region	Perry Russell, Geologist, Science Applications International Corporation	Statement of RWQCB referring the project agency lead to DTSC for potential human health evaluation as "the site will not pose any threat to surface waters or groundwater after remediation."
33	28-Mar-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Review of Comments on Draft Final Documents- Meeting Minutes
34	29-Mar-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Technical Draft Final Meeting - Minutes of Meetings
35	1-Apr-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Monthly Progress Report No. 5 from Science Applications International Corp.
36	16-Apr-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Final Remedial Action Plan for PVIC
37	16-Apr-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Final Remedial Investigation for PVIC
38	16-Apr-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Final Feasibility Study for PVIC
39	16-Apr-02	Dr. Joyce Clarke, Science Applications International Corp.	U.S. Army Corps of Engineers, Los Angeles District, Tawny Tran, PM	Final Community Relations Plan for PVIC

APPENDIX D

NON-BINDING ALLOCATION OF RESPONSIBILITY

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL
PRELIMINARY NONBINDING ALLOCATION OF RESPONSIBILITY

Health and Safety Code (HSC) Section 25356.1 (e) requires the Department of Toxic Substances Control (DTSC) to prepare a preliminary nonbinding allocation of responsibility (the "NBAR") among all identifiable potentially responsible parties (PRPs). HSC Section 25356.3 (a) allows PRPs with an aggregate allocation in excess of 50% to convene an arbitration proceeding by submitting to binding arbitration before an arbitration panel. If PRPs with over 50% of the allocation convene arbitration, then any other PRP wishing to do so may also submit to binding arbitration.

The sole purpose of the NBAR is to establish which PRPs will have an aggregate allocation in excess of 50% and can therefore convene arbitration if they so choose. The NBAR, which is based on the evidence available to the DTSC, is not binding on anyone, including PRPs, DTSC, or the arbitration panel. If a panel is convened, its proceedings are de novo and do not constitute a review of the provisional allocation. The arbitration panel's allocation will be based on the panel's application of the criteria spelled out in HSC Section 25356.3 (c) to the evidence produced at the arbitration hearing. Once arbitration is convened, or waived, the NBAR has no further effect, in arbitration, litigation or any other proceeding, except that both the NBAR and the arbitration panel's allocation are admissible in a court of law, pursuant to HSC Section 25356.7 for the sole purpose of showing the good faith of the parties who have discharged the arbitration panel's decision.

DTSC sets forth the following preliminary nonbinding allocation of responsibility for the Point Vicente Interpretive Center.

The United States, by and through the United States Army Corps of Engineers, has researched the issue of liability at this site and has negotiated a settlement it considers adequate and appropriate with all parties identified as potentially responsible or otherwise financially interested in the allocation of liability or responsibility for the site.

NONBINDING ALLOCATION OF RESPONSIBILITY

The United States, by and through the United States Army Corps of Engineers, has researched the issue of liability at this site and has negotiated a settlement it considers adequate and appropriate with all parties identified as potentially responsible or otherwise financially interested in the allocation of liability or responsibility for the site. Accordingly, the United States, by and through the United States Army Corps of Engineers, declines to comment on the non-binding allocation of responsibility prepared by the Department of Toxic Substances Control.

APPENDIX E

CEQA NEGATIVE DECLARATION

APPENDIX E

CEQA Negative Declaration prepared by DTSC

The CEQA document provided as appendix E is a draft document. Upon finalisation, this draft document should be replaced by the final document and this page removed.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

DRAFT NEGATIVE DECLARATION

Project Title: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Removal Action at Point Vicente Interpretive Center, Rancho Palos Verdes, California

State Clearinghouse Number:

Contact Person and Telephone #: Department of the Army
United States Army Corps of Engineers
Los Angeles District
911 Wilshire Boulevard, Suite 15018
Los Angeles, California 90017-3401
Contact: Ms. Tawny Tran
Phone Number: (213) 452-3991

Project Location (include County):

The site is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard, Los Angeles County (Figure 1). The site is developed with a building, parking lots, and landscaped areas that serve as the Point Vicente Interpretive Center.

Project Description:

The United States Army Corps of Engineers (ACOE) proposes to conduct a non-time critical removal action at Point Vicente Interpretive Center (Center) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) 300.410/300.415. The proposed removal action is subject to the requirements of the California Health and Safety Code, Chapter 6.8. Pursuant to the Public Resources Code Section 21067, the Department of Toxic Substances Control (DTSC), as the lead state regulatory agency is required to comply with the California Environmental Quality Act.

The site is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard (Figure 1). The site is developed with a building, parking lots, and landscaped areas that serve as the Point Vicente Interpretive Center. The area of interest for this Removal Action is the former rifle firing range and surrounding areas with disposed firing range bullet stop soil, discovered during a facility expansion project. The area of study is approximately 28.4 acres of mostly undeveloped land.

The site is located within the Peninsular Range Geomorphic Province which consists of predominantly northerly and northwesterly trending mountains and associated valleys. The Point Vicente Interpretive Center is located in the Palos Verdes Hills, south of the Coastal Plain of Los Angeles County and is underlain by clayey soils and silty sand with gravel and fractured rock. Bedrock in the southwestern Palos Verdes Hills consists of complex stratigraphic layering of shale, mudstone, siltstone, and volcanic basaltic rock.

The City of Rancho Palos Verdes has conducted Remedial Investigations (RI) at the Center which included sampling for soil and groundwater. Results of the investigations showed elevated lead concentrations in surface and subsurface soils from bullet stop soil. The results of the RI human health risk assessment indicated the primary compound posing a risk to construction workers & workers at the Center is lead detected in the soil. The Center hydrogeology is complex. Surface water generally drains off the terrace and over the cliffs to the ocean. The surface water percolates to subsurface (groundwater) through the clay/bedrock interface and move down the slope and penetrates into bedrock fractures to the water table beneath Palos Verdes Peninsula and eventually empty into the Pacific Ocean.

A Remedial Investigation/Feasibility Study Report/Remedial Action Plan (RI/FS/RAP) have been submitted for regulatory review and approval. A work plan which includes a Sampling and Analysis Plan, Quality Assurance Project Plan, and Site Health and Safety Plan will be submitted for regulatory review and concurrence prior to the removal action field implementation.

Removal Alternatives:

Five removal action alternatives were evaluated in the RI/FS report : (1) no action (2) excavation of upper 1-foot surface soil and capping of hot spot areas A, and deed restriction, (3) excavation and capping of areas A and B, plus deed restriction, (4) total excavation of areas A and B and deed restriction, and (5) excavation of area A and upper 1-foot of area B, plus capping and deed restriction. The alternatives were screened with the nine criteria identified in the National Contingency Plan and alternative 5 was the preferred alternative recommended in the FS report and the RAP. There are no known prehistoric or historic archaeological sites at the Center. Therefore, there will be no alteration or destruction of archaeological or paleontological artifacts during the recommended removal action.

Removal Activities

The proposed removal actions consist of the removal of approximately 2,500 cubic yards (cy) of lead impacted soil at the Center. After the removal of the contaminated soil, confirmatory soil samples will be collected to ensure that lead contamination within the surface and subsurface soils have been adequately removed. The excavated area will be backfilled with clean fill material and seeded with natural grasses. Based on the lead content, the lead contaminated soil may qualify as a California hazardous waste and may be disposed at a Class III landfill permitted to accept "special wastes." A front-end loader or backhoe will be used to remove/scrape the contaminated soil. The contaminated soil will be stored immediately at the Center's designated staging area prior to transportation for disposal. The storage area will be constructed with a liner on the existing concrete, asphalt, or dirt surface. The storage area will be bermed, and plastic will be used to cover contaminated materials in the storage area. An appropriate number of anchors will be placed on the plastic to prevent it from being disturbed by the wind. Once the disposition of the material has been decided, the excavated soil and debris will be loaded into dump trucks by a front-end loader and/or backhoe for transportation. All waste materials will be transported for disposal by licensed waste haulers and tarps will be used to cover soils loaded into trucks.

Traffic control:

Traffic control measures will be taken to ensure proper traffic flow into and out of the removal area and will include, but not limited to the identification of routes by flagging, barricades, traffic delineators, or cones. The primary point of access to the Center is expected to be the Palos Verdes Drive West Road. The main vehicular traffic arterial and connector streets leading to the project area is Palos Verdes Road and Hawthorne Boulevard (Figure1-1). This road is not connected to a freeway such as Highway 1. Approximately 3 to 6 daily workers round-trip commutes will be required over the twelve weeks nominal project duration. Vehicles will be

parked solely within the site area. Transportation related to the removal action will take place at off-peak traffic hours between 9:00 a.m. to 4:00 p.m. The Center is remotely located along the Los Angeles Coastline, no significant traffic impact into and out of the project site are expected. Additionally, 4 to 6 trucks a day staggered over 8 hours will not cause significant traffic impact on transportation route.

Erosion Control:

Temporary erosion control measures will be established prior to soil removal, movement and stockpiling. Erosion control measures include placing hay bales in drainage pathways, and employing silt fences and temporary soil dikes as appropriate, during construction activities to prevent soil sediment run off. The soil staging area would be located on existing asphalt at the sites.

Dust Control:

Dust is the only potential contributor during the removal actions to affect the air quality. Dust control measures proposed include using covered roll-off boxes for storing grubbed materials masked with soil, spraying water on roadways, spraying water for dust suppressants, and termination of work during heavy wind periods. The Center water supply will be used for dust control measures and the volume will not impact the water supply for the Center. The dust control measures will be implemented at the beginning of mobilization and continue during all phases of the activities. Air monitoring will be performed during clearing and grubbing of existing contaminated soil and other activities as described in the Site Health and Safety Plan.

Schedule:

The duration of activities at the Center is twelve weeks but the overall removal action from mobilization to demobilization will take about ten weeks. Field activities are scheduled to begin on June 3 and end in late-August 2002. However, the schedule depends upon timely completion of public comment period and responses to public comments.

Findings of Significant Effect on Environment:

DTSC has determined that the project will not have a significant effect on the environment as that term is defined in the Public Resources Code Section 21068.

A copy of the Special Initial Study, which supports this finding, is attached.

Mitigation Measures:

DTSC has determined that the project does not require any mitigation measures beyond those incorporated as part of the project description.

	HSE	714-484-5452	
DTSC Project Manager Signature	Title	Telephone #	Date
Omoruyi Patrick, P.E.			
		714-484-5456	
DTSC Branch/ Unit Chief Signature	Title	Telephone #	Date
John E. Scandura, Chief Southern California Branch Office of Military Facilities			

CALIFORNIA ENVIRONMENTAL QUALITY ACT

SPECIAL INITIAL STUDY

The Department of Toxic Substances Control (DTSC) has completed the following Special Initial Study for this project in accordance with the California Environmental Quality Act (§ 21000 et seq., California Public Resources Code) and implementing Guidelines (§15000 et seq., Title 14, California Code of Regulations). This Special Initial Study has also been used to satisfy the requirements of 711.4, Fish and Game Code and 753.5, Title 14, Code of California Regulations relating to filing of environmental fees.

I. PROJECT INFORMATION

Project Name: Excavation of Lead-Contaminated Soil at Palos Verdes Interpretive Center

Site Location:

Point Vicente Interpretive Center (Center) is located on the coast of the Palos Verdes Peninsula within the City of Rancho Palos Verdes, Los Angeles County, California. The Center is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard (Figure 1-1 and 1-6), and has an address of 31501 Palos Verdes Drive West, Rancho Palos Verdes, California.

Contact Person/ Address/ Phone Number: Ms. Tawny Tran
911 Wilshire Boulevard, Suite 15018
Los Angeles, California 90017-3401
Phone Number: (213) 452-3991

Project Description:

The United States Army Corps of Engineers proposes to conduct a non-time critical removal action at Point Vicente Interpretive Center in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations, sections 300.410 and 300.415 (40 C.F.R.). The proposed removal action is subject to the requirements of the California Health and Safety Code, Chapter 6.8. Pursuant to the Public Resources Code section 21067, the Department of Toxic Substances Control (DTSC), as the lead state regulatory agency is required to comply with the California Environmental Quality Act (CEQA).

The proposed removal actions consist of the removal of approximately 2,500 cubic yards (cy) of lead impacted soil at the Center, and will be of three types. The first is the excavation of soil located in any hot spots. This will involve the digging of a pit to the estimated outside dimensions and depth of the contaminated soil, following extensive sampling of the areas prior to beginning excavation in order to define the dimensions of soil exceeding the remedial goal. The second is the excavation of one foot of topsoil in areas potentially containing bullet lead fragments. Finally, pipe trenching soil will be excavated in order for the City of Rancho Palos Verdes to resume construction of the proposed Center expansion.

Site Setting:

The City of Rancho Palos Verdes has conducted Remedial Investigations (RI) at the Center, which included sampling for soil and groundwater. Results of the investigations showed elevated lead concentrations in surface and subsurface soils from bullet stop soil. The results of the RI human health risk assessment indicated the primary compound posing a risk to construction workers or a worker or visitor at the Center is lead detected in the soil. Also of concern at this site are bullet lead fragments. In order to prevent child exposure to lead by ingestion of these fragments, one foot of existing soil in the

area of potential concern will be removed and replaced with clean topsoil brought off-site or clean on-site soil.

Soil sampling investigations completed thus far indicate that the lead-contaminated soil appears to be limited to a clay-rich zone encountered at shallow depths ranging from one to four feet below ground surface (bgs). The lead levels are low throughout the site with levels above 50 milligrams per kilogram (mg/kg) limited to the area where the deposition or grading of the former known distance rifle range backstop berm soil had occurred. Within this area, five "hot spot" areas were identified, with lead levels ranging from 130 mg/kg to 6,100 mg/kg (Figure 2-1). This area is beneath the existing building on the site, surrounding the building, and in the area of the proposed Center expansion developments to the site, which are adjacent to the existing building. More sampling will be conducted prior to excavation to determine the extent of the "hot spots" and whether other contaminated areas exist in the surrounding areas. Additional soil sampling will be conducted in the alignment of future storm drain and utilities construction, and within the foundation footprint of the future Center Exhibit Building expansion.

Removal Activities:

A front-end loader or backhoe will be used to remove/scrape the contaminated soil. The contaminated soil will be stored immediately at the Center's designated staging area prior to transportation for disposal. The storage area will be constructed with a liner on the existing concrete, asphalt, or dirt surface. The storage area will be bermed, and plastic will be used to cover contaminated materials in the storage area. An appropriate number of anchors will be placed on the plastic to prevent it from being disturbed by the wind. Once the disposition of the material has been decided, the excavated soil and debris will be loaded into dump trucks by a front-end loader and/or backhoe for transportation.

Waste soil transported off-site will be transported in accordance with local, state and federal laws and regulations for that waste soil classification. All hazardous waste will be properly classified and identified with proper shipping names, labels, and placards. Hazardous waste manifests, bills of lading, exception and discrepancy reports will be completed as required. All waste materials will be transported for disposal by licensed waste haulers and tarps will be used to cover soils loaded into trucks.

Soil removed to off-site disposal sites will be replaced with clean fill dirt and seeded with natural grasses. The replacement fill soil will be placed and compacted as appropriate for the filled area use. Following removal of the contaminated soil, confirmatory soil samples will be collected to ensure that lead contamination within the surface and subsurface soils have been adequately removed. Cleanup levels, or remediation goals, are expressed as concentrations of a contaminant and serve to define when remediation has been attained. Achieving the remedial goal in a remedial action should result in residual contamination levels that are protective of human health and the environment. A total lead concentration in soil of 250 mg/kg is the assumed remedial goal. This concentration was developed using the California Lead Risk Assessment Spreadsheet (LeadSpread), the primary tool in California for evaluation of health risks from exposure to lead. According to LeadSpread, 250 mg/kg is protective of children who may incidentally ingest soil and dust.

Upon completion of excavation activities, the excavation depths and perimeters will be surveyed and a map generated outlining the excavations, based on the survey points. This map could be referenced in the future by interested parties to determine the limits of the excavations

Site Location:

The site is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard (Figure 1). The site is developed with a building, parking lots, and landscaped areas that serve as the Point Vicente Interpretive Center. The area of interest for this Removal Action is the former rifle firing range and surrounding areas with disposed firing range bullet stop soil, discovered during a facility expansion project. The area of study is approximately 28.4 acres of mostly undeveloped land.

Site Geology:

The site is located within the Peninsular Range Geomorphic Province, which consists of predominantly northerly and northwesterly trending mountains and associated valleys. The Point Vicente Interpretive Center is located in the Palos Verdes Hills, south of the Coastal Plain of Los Angeles County and is underlain by clayey soils and silty sand with gravel and fractured rock. Bedrock in the southwestern Palos Verdes Hills consists of complex stratigraphic layering of shale, mudstone, siltstone, and volcanic basaltic rock.

The Center hydro-geology is complex. Surface water generally drains off the terrace and over the cliffs to the ocean. The surface water percolates to subsurface (groundwater) through the clay/bedrock interface and moves down the slope and penetrates into bedrock fractures to the water table beneath Palos Verdes Peninsula, eventually emptying into the Pacific Ocean.

Biological Control:

A review of the Rarefind Natural Diversity Database provided by the California Department of Fish and Game (CDFG) has revealed that the primary species of concern are the federally listed El Segundo Blue Butterfly (*Euphiloses battoides allym*) and the Palos Verdes Blue Butterfly (*Glaucopsyche lygdamus palosverdesensis*). A site survey by Kendall H. Osborne, a biologist permitted by the United States Fish and Wildlife Service, was conducted on March 7, 2002. Mr. Osborne concluded that because of the absence of the hostplant and the Palos Verdes Blue Butterfly, this project will not have an adverse impact on this species. However, he concluded that the potential exists for the presence of the El Segundo Blue Butterfly because of hostplant presence in the nature garden adjacent to the area of the proposed project and adjacent cliffs approximately 20 meters away. The El Segundo Blue Butterfly was also observed on similar cliffs and hostplants less than 800 meters to the southeast of the site. However, because no hostplants were observed within the confines of the proposed project, Mr. Osborne believes that the project will not adversely affect the El Segundo Blue Butterfly. To ensure that the project will not adversely affect the El Segundo Blue Butterfly, additional protective measures will be taken. All areas containing the host plant, as indicated by Mr. Osborne, will be fenced prior to construction. An effective fence will employ a meter high sheet of 1/8-inch plywood supported and fixed into the ground by wooden stakes, preventing soil spillage into the hostplant. A dedicated biologist will be present during field activities to provide awareness training to the construction workers regarding the possible presence and identification of both El Segundo Blue Butterfly and Palos Verdes Blue Butterfly habitats.

Traffic Control:

Traffic control measures will be taken to ensure proper traffic flow into and out of the removal area and will include, but not be limited to, the identification of routes by flagging, barricades, traffic delineators, or cones. The primary point of access to the Center is expected to be the Palos Verdes Drive West Road. The main vehicular traffic arterial and connector streets leading to the project area is Palos Verdes Road and Hawthorne Boulevard (Figure1-1). Approximately two to four trucks per day will enter and leave the site to transport the excavated soil. In addition, approximately 3 to 6 daily workers round-trip commutes will be required over the twelve weeks nominal project duration. Vehicles will be parked solely within the site area. Transportation related to the removal action will take place at off-peak traffic hours between 9:00 a.m. to 4:00 p.m. The Center is remotely located along the Los Angeles Coastline; therefore, no significant traffic impact into and out of the project site is expected.

Erosion Control:

Temporary erosion control measures will be established prior to soil removal, movement and stockpiling. Erosion control measures include placing hay bales in drainage pathways, and employing silt fences and temporary soil dikes, as appropriate, during construction activities to prevent soil sediment run off.

Dust Control:

Dust generated during the removal activities is the only potential contributor to affect the air quality. Dust control measures proposed include using covered roll-off boxes for storing grubbed materials masked with soil, spraying water on roadways, spraying water for dust suppression, and termination of work during heavy wind periods. The dust control measures will be implemented if the action level for dust is exceeded and/or dust emanating from the site operations is visible at the property line. Air monitoring will be performed during clearing and grubbing of existing contaminated soil and other activities as described in the Site Health and Safety Plan.

The Center water supply will be used for dust control measures and the volume will not impact the water supply for the Center. Because the Center is located on a terrace that is gently sloping towards the ocean, surface water generally drains off the terrace and over the cliffs to the ocean. To prevent stormwater runoff into the ocean, diversion ditches, benches, berms, and any measures required by area wide plans under the Clean Water Act and local ordinances will be implemented.

Schedule:

The duration of activities at the Center is twelve weeks but the overall removal action from mobilization to demobilization will take about ten weeks. Field activities are scheduled to begin on June 3 and end in late-August 2002. However, the schedule depends upon timely completion of required public comment periods and responses to public comments.

A Remedial Investigation/Feasibility Study Report/Remedial Action Plan (RI/FS/RAP) has been submitted for regulatory review and approval. A work plan that includes a Sampling and Analysis Plan, Quality Assurance Project Plan, and Site Health and Safety Plan will be submitted for regulatory review and concurrence prior to the removal action field implementation.

Agencies Having Jurisdiction Over the project/ Types of Permits Required: California Environmental Protection Agency, Department of Toxic Substances Control will be overseeing the project with Lead Agency responsibilities.

II. DISCRETIONARY APPROVAL ACTION BEING CONSIDERED BY DTSC

- | | |
|--|---|
| <input type="checkbox"/> Initial Permit Issuance | <input checked="" type="checkbox"/> Removal Action Plan |
| <input type="checkbox"/> Permit Renewal | <input type="checkbox"/> Removal Action Workplan |
| <input type="checkbox"/> Permit Modification | <input type="checkbox"/> Interim Removal |
| <input type="checkbox"/> Closure Plan | <input type="checkbox"/> Other (Specify) |
| <input type="checkbox"/> Regulations | Engineering Evaluation /Cost Analysis |

Program/ Region Approving Project: Site Mitigation Program
Southern California Branch
Office of Military Facilities

Contact Person/ Address/ Phone Number: Mr. Omoruyi Patrick, P.E.
Department of Toxic Substances Control
Southern California Branch
Office of Military Facilities
5796 Corporate Avenue
Cypress, California 90630
(714) 484-5452

California Department of Parks and Recreation, 2002. Office of Historic Preservation.
www.ohp.parks.ca.gov.

National Park Service, 2002. National Register of Historic Places. www.cr.rps.gov.

SAIC, 2002. Draft Remedial Action Plan, Point Vicente Interpretive Center, January 8, 2002.

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

6. Geology and Soils

Project activities likely to create an impact.

The proposed removal actions consist of the removal of approximately 2,500 cy of lead impacted soil at the Center. The excavated area will be backfilled with clean fill material, returned to original grade, and seeded with natural grasses.

Description of Environmental Setting:

The Center is located within the Peninsular Range Geomorphic Province, which consists of predominantly northerly and northwesterly trending mountains and associated valleys. The Point Vicente Interpretive Center is located in the Palos Verdes Hills, south of the Coastal Plain of Los Angeles County and is underlain by clayey soils and silty sand with gravel and fractured rock. Bedrock in the southwestern Palos Verdes Hills consists of complex stratigraphic layering of shale, mudstone, siltstone, and volcanic basaltic rock.

The site at Point Vicente is not crossed by any known active or potentially active faults.

Analysis of Potential Impacts:

Temporary erosion control measures will be established prior to soil removal, movement and stockpiling. Erosion control measures include placing hay bales in drainage pathways, and employing silt fences and temporary soil dikes as appropriate, during construction activities to prevent soil sediment run off.

Because this site is not crossed by any known active or potentially active faults and all soil removed will be replaced with clean soil, this removal action at the Center will not:

- a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42)*
 - Strong seismic ground shaking
 - Seismic-related ground failure, including liquefaction
 - Landslides
- b. Result in substantial soil erosion or the loss of topsoil.
- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

7. Hazards and Hazardous Materials

Project activities likely to create an impact:

Potential risks associated with the project include, accidents and injuries to project workers and spills of lead soil or hazardous materials during the removal action construction activities.

Description of Environmental Setting:

The Center is located in an isolated location outside of Rancho Palos Verdes, with controlled public access to the Center. The nearest residential area is located within one to two miles.

Analysis of Potential Impacts:

When lead was detected in site soils in August 1999, the Center was closed as a precaution to protect the public from exposure to lead-contaminated soil. The vehicular access gate is locked, and a sign is posted stating that the Center is closed because of the finding of lead-contaminated soil.

After removal of the contaminated soil, confirmatory soil samples will be collected to ensure that lead contamination within the surface and subsurface soils has been adequately removed. A total lead concentration in soil of 250 mg/kg is the assumed remedial goal. This concentration was developed using the LeadSpread, the primary tool in California for evaluation of health risks from exposure to lead. According to LeadSpread, 250 mg/kg is protective of children who may incidentally ingest soil and dust.

The contaminated soil will be stored immediately at the Center's designated staging area prior to transportation for disposal. The storage area will be constructed with a liner on the existing concrete, asphalt, or dirt surface. The storage area will be bermed, and plastic will be used to cover contaminated materials in the storage area. An appropriate number of anchors will be placed on the plastic to prevent it from being disturbed by the wind.

Because dust generated during the removal actions has the potential to create a hazard to the public, dust control measures will be implemented if the action level for dust is exceeded and/or dust emanating from the site operations is visible at the property line. Dust control measures proposed include using covered roll-off boxes for storing grubbed materials masked with soil, spraying water on roadways, spraying water for dust suppression, and termination of work during heavy wind periods. Air monitoring will be performed during clearing and grubbing of existing contaminated soil and other activities as described in the DTSC approved Site Health and Safety Plan, prepared in accordance with the Code of Federal Regulations, title 29, section 1910.120 and California Code of Regulations, title 8, section 5192. Workers will be required to wear respiratory protection if PM^{10} levels are exceeded.

For workers exposed to air potentially containing lead-contaminated particulates, the highest eight hour average of lead permitted in air is 50 micrograms per meter cubed (ug/m^3). This is the highest level of lead in air to which field personnel may be permissibly exposed over an eight hour workday. However, since this is the eight hour average, short exposures above the permitted exposure level are permitted so long as for each eight hour workday the average exposure does not exceed this level. The maximum permitted average exposure to lead for a 10-hour workday is $40 ug/m^3$.

Initial personal air monitoring will be conducted on at least two representative field personnel using integrated sampling pumps in accordance with the National Institute of Occupational Safety and Health. The duration of sampling will be done to enable each field personnel's exposure level to be reasonably represented by at least one full shift (at least seven hours). Samples will be analyzed by a laboratory accredited by the American Industrial Hygiene Association. If this initial determination shows that a reasonable possibility exists that any field personnel may be exposed, without regard to respirators, over the action level for lead of $50 ug/m^3$ averaged over an eight hour day, an air monitoring program will be implemented.

The soil will be classified according to the total concentration and solubility of the lead contamination contained in the soil. There are four possible classifications for the soil as follows:

1. Soil is not a hazardous waste. This soil can be redispersed on-site if the total lead is below the proposed remedial goal of 250 mg/kg.
2. Soil is not a hazardous waste, but is a California regulated material (total lead concentration is between 350 and 1000 mg/kg and the soil does not exceed the leachability limit for lead of 5 mg/L by the California STLC test). This soil can go to a Class III landfill that is permitted to accept this "special waste." If no such landfill is available, the soil must go to a Class I hazardous waste landfill.
3. Soil is a California, but not a RCRA, hazardous waste. This soil must be disposed to a Class I hazardous waste landfill as a California hazardous waste.
4. Soil is a RCRA hazardous waste. This soil must be disposed to a Class I hazardous waste landfill.

The excavated soil and debris will be loaded into dump trucks by a front-end loader and/or backhoe for transportation. All waste materials will be transported for disposal to a Class I landfill by licensed waste haulers; tarps will be used to cover soils loaded into trucks.

All persons transporting hazardous materials will possess the necessary United States Department of Transportation training per Code of Federal Regulations, title 49. All vehicles used will be insured for accidental liability.

The site is not included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5.

The removal action at the Center will not:

- a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials.
- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.
- d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment.
- e. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

References:

SAIC, 2002. Draft Remedial Action Plan, Point Vicente Interpretive Center, January 8, 2002.

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

8. Hydrology and Water Quality

Project activities likely to create an impact:

Surface water runoff may be a transport mechanism for lead migration.

Description of Environmental Setting:

Surface Water Hydrology- The site is located within the Peninsular Range Geomorphic Province, which consists of predominantly northerly and northwesterly trending mountains and associated valleys. The Point Vicente Interpretive Center is located in the Palos Verdes Hills, south of the Coastal Plain of Los Angeles County and is underlain by clayey soils and silty sand with gravel and fractured rock. Bedrock in the southwestern Palos Verdes Hills consists of complex stratigraphic layering of shale, mudstone, siltstone, and volcanic basaltic rock.

No surface waters (other than small, intermittent puddles) and no freshwater aquatic/emergent vegetation has been observed in this area during site investigations.

Groundwater Hydro-geology - The Center hydro-geology is complex. Surface water generally drains off the terrace and over the cliffs to the ocean. The surface water percolates to subsurface (groundwater) through the clay/bedrock interface and moves down slope and penetrates bedrock fractures to the water table beneath Palos Verdes Peninsula, eventually emptying into the Pacific Ocean.

Analysis of Potential Impacts:

The bedrock located below the site contains limited quantities of water and there are no aquifers beneath the site. Additionally, Los Angeles County Public Works Hydraulic/Water Conservation Division records indicate that no wells are present at the site or within two miles of the site. There are no streams present on or near the site.

The Center water supply will be used for dust control measures and the volume will not impact the water supply for the Center. Because the Center is located on a terrace that is gently sloping towards the ocean, surface water generally drains off the terrace and over the cliffs to the ocean. To prevent stormwater runoff into the ocean, diversion ditches, benches, berms, and any measures required by area wide plans under the Clean Water Act and local ordinances will be implemented.

The project site is not located in a flood area.

Considering the information above, the project will not:

- a. Violate any water quality standards or waste discharge requirements.
- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.
- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site.
- e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- f. Otherwise substantially degrade water quality.
- g. Place within a 100-flood hazard area structures which would impede or redirect flood flows.

h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

I Inundation by sieche, tsunami or mudflow.

In addition, the following are addressed to meet the requirements set forth under Section 711.4, Fish and Game Code and 753.5, Title 14, Code of California Regulations relating to filing of environmental fees:

- Changes to riparian land, rivers, streams, watercourses and wetlands under state and federal jurisdiction.
- Changes to any water resources which will individually or cumulatively result in a loss of biological diversity among the plants and animals residing in that water.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

9. Land Use and Planning

Project activities likely to create an impact:

Since contaminated soil could remain beneath the existing Center building or deeper in the soil at some unidentified areas, a deed restriction will be placed on the site.

Description of Environmental Setting:

The site is zoned for recreational use and is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard (Figure 1-1). The site is developed with a building, parking lots, and landscaped areas that serve as the Point Vicente Interpretive Center. The area of interest for this Removal Action is the former rifle firing range and surrounding areas with disposed firing range bullet stop soil, discovered during a facility expansion project. The area of study is approximately 28.4 acres of mostly undeveloped land.

Analysis of Potential Impacts:

Remedial activities at the site will remove lead-contaminated soil in various identified hot spots and areas potentially containing lead bullet fragments. However, contaminated soil could remain beneath the existing building and deeper in the soil at some unidentified areas. To prevent future exposure, a deed

restriction requiring that soil tests be done and, if necessary, worker protective precautions taken during future deep excavation will be placed on the site.

The removal action at the Center will not:

- a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- b. Conflict with any applicable habitat conservation plan or natural community conservation plan.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

10. Mineral Resources

Project activities likely to create an impact:

The lead removal action will not have significant impacts on mineral resources because there will be no below ground excavation that would disrupt mineral resources.

Description of Environmental Setting:

The site is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard (Figure 1-1). The site is developed with a building, parking lots, and landscaped areas that serve as the Point Vicente Interpretive Center. The area of interest for this Removal Action is the former rifle firing range and surrounding areas with disposed firing range bullet stop soil, discovered during a facility expansion project. The area of study is approximately 28.4 acres of mostly undeveloped land.

Analysis of Potential Impacts:

No effects on natural resources are anticipated during the investigation/removal actions at the Center. The project will only involve small, earth moving vehicles and equipment; therefore, the proposed removal action will not result in an increased rate of use of natural resources, nor will it result in any substantial depletion of nonrenewable resources.

The area is not in a mineral resource area, therefore, it will not:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

- b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

January 2000, Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Game.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

11. Noise

Project activities likely to create an impact:

Heavy equipment and trucks will generate noise during on-site remediation activities.

Description of Environmental Setting:

The contractor has established admissible noise levels of 85 decibel (db) for 8 hours, which is similar to industry standard of 75-85 db levels. Since the Center is located approximately 1 to 2 miles from the nearest residential receptors, it will not have impact on those receptors.

Analysis of Potential Impacts:

When lead was detected in site soils in August 1999, the Center was closed as a precaution to protect the public from exposure to lead-contaminated soil. The vehicular access gate is locked, and a sign is posted stating that the Center is closed because of the finding of lead-contaminated soil. Therefore, visitors to the Center will not be exposed to noise hazards, as there will be no visitors allowed onsite during construction activities.

Personnel working on the project will be exposed to short-term noise due to machinery and trucks. Where excessive noise may be encountered, sound levels will be measured initially on-site and whenever new tasks are started or additional equipment is brought onto the site that has not previously had its sound level quantified. Workers on the project will use personal protective equipment, such as earplugs or other hearing protection. Project implementation will adhere to procedures outlined in the DTSC approved Site Health and Safety Plan prepared pursuant to the Code of Federal Regulations, title 29, section 1910.120 and California Code of Regulations, title 8, section 5192, to maintain workers exposure within acceptable noise levels.

No site work will be conducted between the hours of 7 p.m. and 7 a.m., when nearby receptors are most likely to be in their homes. Haul trucks will be scheduled to leave and arrive during off-peak traffic hours to the maximum extent.

Therefore, the project will not:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels.

- c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project.
- d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

References:

SAIC, 2002. Draft Remedial Action Plan, Point Vicente Interpretive Center, January 8, 2002.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

12. Population and Housing

Project activities likely to create an impact:

The lead removal action will not have a significant impacts on population or housing because the project does not involve the creation or destruction of housing.

Description of Environmental Setting:

The City of Rancho Palos Verdes and the Point Vicente Interpretive Center oversee the Center. The Center is isolated from the housing area and its primary usage is as an educational and recreational resource center for the Rancho Palos Verde Community. Additionally, the Center is the premier whale-watching location on the West Coast for the annual census of gray whale migration.

Analysis of Potential Impacts:

The project does not involve the creation or destruction of housing. Additionally, the project will not require the displacement of substantial numbers of existing housing or people. Therefore, the removal action at the Center will not:

- a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

13. Public Services

Project activities likely to create an impact:

The lead removal action will not have significant impacts on public services, because no additional public services are required.

Description of Environmental Setting:

The entire Center is under the jurisdiction of the City of Rancho Palos Verdes, which provides its own public safety services.

Analysis of Potential Impacts:

The city fire and police departments will be notified in advance of the project activities. In the event of an onsite fire or medical emergency, fire suppression and ambulance transfer to local hospital will be available. Existing service levels would not be substantially impacted.

Efforts will be made to prevent the creation of excessive information demands on local emergency service agencies. Every effort will be made to inform the public the start of the excavation, its progress and the appropriate DTSC staff to contact for information or complaints regarding the excavation or any transportation activity. This will avoid excessive use of the City's emergency response capability and 911 reporting system for non-emergency public concerns.

The removal action at the Center will not:

- a Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:
 - Fire protection
 - Police protection
 - Schools
 - Parks

- Other public facilities

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

14. Recreation

Project activities likely to create an impact:

The site will remain closed to the public during the remediation activities.

Description of Environmental Setting:

The Center is zoned for recreational use, and is the premier whale-watching location on the West Coast for the annual census of gray whale migration.

Analysis of Potential Impacts:

When lead was detected in site soils in August 1999, the Center was closed as a precaution to protect the public from exposure to lead-contaminated soil. The vehicular access gate is locked, and a sign is posted stating that the Center is closed because of the finding of lead-contaminated soil.

Although a deed restriction will be placed on the property following all removal activities, the area will remain zoned for recreational use and will reopen to the public. The deed restriction placed on the site will not affect future use of the recreational facilities.

Completion of this project will not result in increased use of the Center. Use of the Center will be similar to use before removal activities. Therefor, this project will not:

- a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- b. Include recreational facilities or require construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

15. Transportation and Traffic

Project activities likely to create an impact:

Construction vehicles entering the site will have temporary effects of traffic within the vicinity of the site.

Description of Environmental Setting:

The primary point of access to the Center is expected to be the Palos Verdes Drive West Road. The main vehicular traffic arterial and connector streets leading to the project area is Palos Verdes Road and Hawthorne Boulevard (Figure 1-1). This road is not connected to a freeway.

Analysis of Potential Impacts:

Traffic control measures will be taken to ensure proper traffic flow into and out of the removal area and will include, but not be limited to, the identification of routes by flagging, barricades, traffic delineators, or cones. Approximately two to four trucks per day will enter and leave the site to transport the excavated soil. In addition approximately 3 to 6 daily workers round-trip commutes will be required over the twelve weeks nominal project duration. Vehicles will be parked solely within the site area. Transportation related to the removal action will take place at off-peak traffic hours between 9:00 a.m. to 4:00 p.m. The Center is remotely located along the Los Angeles Coastline; therefore, no significant traffic impact into and out of the project site is expected. Additionally, 4 to 6 trucks a day staggered over 8 hours, for ten weeks, will not cause significant traffic impacts on the transportation route.

Therefore, this project will not:

- a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

- b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway.
- c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- d. Result in inadequate emergency access.
- e. Result in inadequate parking capacity.
- f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

16. Utilities and Service Systems

Project activities likely to create an impact:

Fossil Fuel Consumption

There are no substantial changes in energy use or demand. The project will use fuels such as gasoline for worker's vehicles and diesel fuel for operation of the soil excavation equipment. There is expected to be four to six trucks per day for ten weeks. Fuel consumption for this minimal number of vehicles would not be substantial.

Utilities

A temporary trailer will be delivered to the Site to serve as a project management office for all Site-related activities.

Description of Environmental Setting:

There are electrical and gas lines in and near the Center location. Electricity is provided to all developed portions of Los Angeles County by the Southern California Edison (SCE) company.

SCE obtains its electricity from a variety of sources including nuclear power and hydroelectric plants.

Analysis of Potential Impacts:

Current energy demand at the Site will be less than when the Site was under full operation as a recreational facility. Energy will be used for lighting and the operation of a portable office utilized by the consulting firms performing the Site excavation activities.

The Center water supply will be used for dust control measures and the volume will not impact the water supply for the Center. Methods to prevent erosion and control sedimentation from stormwater and wastewater will include, but not be limited to, diversion ditches, benches, berms, and any measures required by area wide plans under the Clean Water Act and local ordinances.

Municipal waste generated during onsite activities will be placed in a sanitary rubbish container and disposed of at an appropriate landfill by a subcontracted waste management firm. Lead fragments segregated from the excavated soil will be profiled according to hazardous waste characterization procedures and properly disposed.

Excavated soil will be profiled according to hazardous waste characterization procedures and sent off-site for disposal as detailed below:

1. Soil is not a hazardous waste. This soil can be redispersed on-site if the total lead is below the proposed remedial goal of 250 mg/kg.
2. Soil is not a hazardous waste, but is a California regulated material (total lead concentration is between 350 and 1000 mg/kg and the soil does not exceed the leachability limit for lead of 5 mg/L by the California STLC test). This soil can go to a Class III landfill that is permitted to accept this "special waste." If no such landfill is available, the soil must go to a Class I hazardous waste landfill.
3. Soil is a California, but not a RCRA, hazardous waste. This soil must be disposed to a Class I hazardous waste landfill as a California hazardous waste.
4. Soil is a RCAR hazardous waste. This soil must be disposed to a Class I hazardous waste landfill.

Disposal of the soil to a Class I or Class III landfill will have no impact on municipal solid waste landfills.

Therefore, this project will not:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

- e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.
- f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.
- g. Comply with federal, state, and local statutes and regulations related to solid waste.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

17. Cumulative Effects

Project activities likely to create an impact:

Removal of the lead-contaminated soil must be completed before expansion of the Center can resume.

Description of Environmental Setting:

The site is zoned for recreational use and is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard (Figure 1). The site is developed with a building, parking lots, and landscaped areas that serve as the Point Vicente Interpretive Center. The area of interest for this Removal Action is the former rifle firing range and surrounding areas with disposed firing range bullet stop soil, discovered during a facility expansion project. The area of study is approximately 28.4 acres of mostly undeveloped land.

Analysis of Potential Impacts:

The City of Rancho Palos Verdes intends to resume construction of the proposed expansion shortly after site remediation activities are completed. However, the construction activities and the soil excavation project will not be conducted simultaneously. Therefor, this project will not:

- a. Increase the need for developing new technologies, especially for managing any hazardous or non-hazardous wastes that the project generates.

- b. Increase the need for developing new technologies for any other aspects of the projects.
- c. Leads to a larger project or leads to a series of projects, or is a step to additional projects. Examples of DTSC projects include Interim Corrective Measures and Removal Actions that are not final remedies for a site or facility.
- d. Alters the location, distribution, density or growth rate of the human population of an area.
- e. Affect existing housing, public services, public infrastructure, or creates demands for additional housing.
- f. Be cumulatively considerable on the environments with cumulative adverse effects on air, water, habitats, natural resources, etc.

References:

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

January 2000, Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Game.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

18. Mandatory Findings of Significance

Project activities likely to create an impact:

The removal action at the Center will not have overall significant impacts.

Description of Environmental Setting:

The site is zoned for recreational use and is located southwest of the intersection of Palos Verdes Drive West and Hawthorne Boulevard (Figure 1). The site is developed with a building, parking lots, and landscaped areas that serve as the Point Vicente Interpretive Center. The area of interest for this Removal Action is the former rifle firing range and surrounding areas with disposed firing range bullet stop soil, discovered during a facility expansion project. The area of study is approximately 28.4 acres of mostly undeveloped land.

Analysis of Potential Impacts:

- a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

The area surrounding the Center is dominated by annual grassland scrub habitat. The low stature of annual grassland plants provides little cover and few nesting sites for wildlife.

A review of the Rarefind Natural Diversity Database provided by the California Department of Fish and Game (CDFG) has revealed that the primary species of concern are the federally listed El Segundo Blue Butterfly (*Euphiloses battoides allym*) and the Palos Verdes Blue Butterfly (*Glaucopsyche lygdamus palosverdesensis*). A site survey by Kendall H. Osborne, a biologist permitted by the United States Fish and Wildlife Service, was conducted on March 7, 2002. Mr. Osborne concluded that because of the absence of the hostplant and the Palos Verdes Blue Butterfly, this project will not have an adverse impact on this species. However, he concluded that the potential exists for the presence of the El Segundo Blue Butterfly because of hostplant presence in the nature garden adjacent to the area of the proposed project and adjacent cliffs approximately 20 meters away. The El Segundo Blue Butterfly was also observed on similar cliffs and hostplants less than 800 meters to the southeast of the site. However, because no hostplants were observed within the confines of the proposed project, Mr. Osborne believes that the project will not adversely affect the El Segundo Blue Butterfly. To ensure that the project will not adversely affect the El Segundo Blue Butterfly, additional protective measures will be taken. All areas containing the host plant, as indicated by Mr. Osborne, will be fenced prior to construction. An effective fence will employ a meter high sheet of 1/8 inch plywood supported and fixed into the ground by wooden stakes, preventing soil spillage into the hostplant. A dedicated biologist will be present during field activities to provide awareness training to the construction workers regarding the possible presence and identification of both El Segundo Blue Butterfly and Palos Verdes Blue Butterfly habitats.

The Center water supply will be used for dust control measures and the volume will not impact the water supply for the Center. Because the Center is located on a terrace that is gently sloping towards the ocean, surface water generally drains off the terrace and over the cliffs to the ocean. To prevent stormwater runoff into the ocean, diversion ditches, benches, berms, and any measures required by area wide plans under the Clean Water Act and local ordinances will be implemented.

According to the National Register of Historic Places listed by the National Park Service, there are no federally listed historical sites within the excavation area. The California Department of Parks and Recreation, Office of Historic Preservation does not have the site listed as either a state or American Indian historical site with the State of California. Based on DTSC's historical knowledge of the site, historical and archeological artifacts are not expected to be encountered at the Center. However, the contractor's archeologist will be on site during all excavation activities, if required. Measures will be taken to minimize disturbance during surface clearing and grading. Access roads already exist to the Center.

With the presence of a biologist during field activities and awareness training of all construction workers in addition to the prevention of wastewater draining into the ocean and the absence of historical and archeological artifacts, DTSC has determined that this project will not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

- b. Have impacts that are individually limited but cumulatively considerable. As used in the subsection, "cumulatively considerable".

["Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects]

The City of Rancho Palos Verdes intends to resume construction of the proposed expansion shortly after site remediation activities are completed. The construction activities and the soil excavation project will not be conducted simultaneously. Because the projects will not occur simultaneously, there will be no cumulative effects on traffic and transportation, air quality, water quality, public services, or utilities and service systems.

- c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

When lead was detected in site soils in August 1999, the Center was closed as a precaution to protect the public from exposure to lead-contaminated soil. The vehicular access gate is locked, and a sign is posted stating that the Center is closed because of the finding of lead-contaminated soil.

After the removal of the contaminated soil, confirmatory soil samples will be collected to ensure that lead contamination within the surface and subsurface soils has been adequately removed. A total lead concentration in soil of 250 mg/kg is the assumed remedial goal. This concentration was developed using the LeadSpread, the primary tool in California for evaluation of health risks from exposure to lead. According to LeadSpread, 250 mg/kg is protective of children who may incidentally ingest soil and dust.

The contaminated soil will be stored immediately at the Center's designated staging area prior to transportation for disposal. The storage area will be constructed with a liner on the existing concrete, asphalt, or dirt surface. The storage area will be bermed, and plastic will be used to cover contaminated materials in the storage area. An appropriate number of anchors will be placed on the plastic to prevent it from being disturbed by the wind.

Because dust generated during the removal actions has the potential to create a hazard to the public, dust control measures will be implemented if the action level for dust is exceeded and/or dust emanating from the site is visible at the property line. Dust control measures proposed include using covered roll-off boxes for storing grubbed materials masked with soil, spraying water on roadways, spraying water for dust suppression, and termination of work during heavy wind periods. Air monitoring will be performed during clearing and grubbing of existing contaminated soil and other activities as described in the DTSC approved Site Health and Safety Plan prepared in accordance with the Code of Federal Regulations, title 29, section 1910.120 and California Code of Regulations, title 8, section 5192. Workers will be required to wear respiratory protection if PM¹⁰ levels are exceeded.

For workers exposed to air potentially containing lead-contaminated particulates, the highest eight hour average of lead permitted in air is 50 micrograms per meter cubed (ug/m³). This is the highest level of lead in air to which field personnel may be permissibly exposed over an eight hour workday. However, since this is the eight hour average, short exposures above the permitted exposure level are permitted so long as for each eight hour workday the average exposure does not exceed this level. The maximum permitted average exposure to lead for a 10-hour workday is 40 ug/m³.

Initial personal air monitoring will be conducted on at least two representative field personnel using integrated sampling pumps in accordance with the National Institute of Occupational Safety and Health. The duration of sampling will be done to enable each field personnel's exposure level to be reasonably represented by at least one full shift (at least seven hours). Samples will be analyzed by a laboratory accredited by the American Industrial Hygiene

Association. If this initial determination shows that a reasonable possibility exists that any field personnel may be exposed, without regard to respirators, over the action level for lead of 50 ug/m³ averaged over an eight hour day, an air monitoring program will be implemented.

Once the disposition of the material has been decided, the excavated soil and debris will be loaded into dump trucks by a front-end loader and/or backhoe for transportation. All waste materials will be transported for disposal by licensed waste haulers and tarps will be used to cover soils loaded into trucks.

All persons transporting hazardous materials will possess the necessary United States Department of Transportation training per Code of Federal Regulations, title 49. All vehicles used will be insured for accidental liability.

With dust control measures in place and the completion of confirmatory tests to ensure that the remaining exposed soil is non-hazardous, DTSC has determined that the project will not result in adverse effects on human beings, either directly or indirectly.

References:

California Department of Parks and Recreation, 2002. Office of Historic Preservation. www.ohp.parks.ca.gov.

National Park Service, 2002. National Register of Historic Places. www.cr.rps.gov.

SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.

SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 24, 2001.

The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.

January 2000, Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Game.

The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.

Findings of Significance:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

V. DETERMINATION OF DE MINIMIS IMPACT FINDING

On the basis of this Special Initial Study:

I find that there is no evidence before the Department of Toxic Substances Control that the proposed project will have a potential for an adverse effect on wildlife resources or the habitat upon which the wildlife depend. A Negative Declaration with a De Minimis Impact Finding will be prepared.

VI. DETERMINATION OF APPROPRIATE ENVIRONMENTAL DOCUMENT

On the basis of this Special Initial Study:

- I find that the proposed project COULD NOT have a significant effect on the environment. A NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project COULD HAVE a significant effect on the environment, mitigation measures have been added to the project which would reduce these effects to less than significant levels. A NEGATIVE DECLARATION will be prepared.
- I find that the proposed project COULD HAVE a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

<hr/>	HSE	714-484-5452	
DTSC Project Manager Signature	Title	Telephone #	Date
Omoruyi Patrick, P.E.			
<hr/>		714-484-5456	
DTSC Branch/ Unit Chief Signature	Title	Telephone #	Date
John E. Scandura, Chief Southern California Branch Office of Military Facilities			

ATTACHMENT A
SPECIAL
INITIAL STUDY
REFERENCE LIST
for
(Project Name)

1. California Department of Parks and Recreation, 2002. Office of Historic Preservation. www.ohp.parks.ca.gov.
 2. National Park Service, 2002. National Register of Historic Places. www.cr.rps.gov.
 3. SAIC, 2001. Draft Remedial Investigation Report, Point Vicente Interpretive Center, December 24, 2001.
 4. SAIC, 2001. Draft Feasibility Study Report, Point Vicente Interpretive Center, December 4, 2001.
 5. The Source Group, Inc., 2001. Site Assessment Report, Point Vicente Interpretive Center, July 2000.
 6. January 2000, Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Game.
- The Source Group, Inc., 2001. Draft Additional Site Assessment Report, Point Vicente Interpretive Center, October 2001.